

#### 4.6 Economic Activity and Value

The following sections describe the effects of the Proposed Action and alternatives on salmon commercial fisheries, salmon sport fisheries, and regional economies in the Puget Sound area. Economic impact indicators include sales by commercial salmon harvesters and processors, sales by businesses to sport fishing anglers, net economic values to commercial harvesters and processors, angler days, net economic values to sport anglers, and regional employment and personal income levels. Major effects on these indicators are summarized in Table 4.6-1, which characterizes the severity of predicted economic impacts. Based on an assessment of the annual variability in the economic impact indicators and on best professional judgment, the effects are characterized as follows: no impact (i.e., no change in economic impact indicators), low impact (i.e., less than a 2% change), moderate impact (i.e., 2 to 10% change), and substantial impact (more than 10% change).

The impact predictions presented in this section, which draw from the effects shown in Tables 4.6-2 through 4.6-19, are based on assumptions and data sources described in Appendix D. It should be noted that the direct employment effects of the Proposed Action and alternatives on the commercial salmon harvesting sector are evaluated using two measures: direct jobs and direct employment (Tables 4.6-3, 4.6-7, 4.6-11, and 4.6-15). “Direct jobs” represent both full-time and part-time jobs, whereas “direct employment” represents full-time equivalent (FTE) jobs. Nearly all of the “direct jobs” are part-time positions because of the seasonality of commercial salmon fishing in Puget Sound. Many persons engaged in commercial salmon fishing also participate in other fisheries and/or have other occupations. Consequently, the effect of changes in the salmon harvest associated with Alternatives 2, 3, or 4 on the number of “direct jobs” in commercial fishing is difficult to assess, and the numbers presented in Tables 4.6-3, 4.6-7, 4.6-11, and 4.6-15 should be interpreted as estimates of the number of potentially-affected persons employed in the salmon fishing industry, as opposed to the number of persons who would necessarily become unemployed.

It also should be noted that estimated changes in net economic values to commercial salmon harvesters and processors under Alternatives 2, 3, or 4 exceed the estimates of net economic value under the Proposed Action/Status Quo. These results reflect consideration of the cost of unemployed labor and the potential loss of capital investments (i.e., boats and equipment) used for commercial fishing that would result from the substantial reductions in the commercial salmon harvest under Alternatives 2, 3, or 4. Substantial changes in the commercial harvest of salmon also would likely affect tribal commercial fishermen differently than non-tribal fishermen because of existing differences in alternative employment and capital investment opportunities; however, this issue, discussed more fully

in Attachment C of Appendix D, and the associated effects on net economic values, could not be fully resolved for the analysis.

#### **4.6.1 Alternative 1 – Proposed Action/Status Quo**

The Proposed Action would maintain commercial and sport fisheries at levels similar to conditions in the past.

##### **4.6.1.1 Summary of Scenario Differences**

Scenario A, which assumes high abundance and Canadian/Alaskan fisheries similar to those in 2003, is predicted generally to result in the highest levels of commercial and sport fishing activity, followed by Scenario B (high abundance with maximum Canadian/Alaskan fisheries); Scenario C (30% reduction in abundance with Canadian/Alaskan fisheries similar to 2003); and Scenario D (30% reduction in abundance with maximum Canadian/Alaskan fisheries).

The differences in commercial and sport fishing activity across the four scenarios are not predicted to be large. Compared to commercial salmon harvests under Scenario A, which are predicted to total an estimated 20.0 million pounds, Scenario B is predicted to result in harvests that would be about 99 percent of the levels under Scenario A; Scenario C harvests are predicted to be 98 percent of Scenario A levels; and Scenario D harvests are predicted to be 97 percent of Scenario A levels. In terms of sport fishing activity, Scenario B is predicted to result in angler trips that would be about 99 percent of the 1.4 million Scenario A trips; Scenario C trips are predicted to be 93 percent of Scenario A trips; and Scenario D trips are predicted to be 95 percent of Scenario A trips.

#### **4.6.2 Alternative 2 – Escapement Goal Management at the Management Unit Level**

Alternative 2, the management unit-based escapement alternative, is predicted to result in commercial and sport fishing activities at levels substantially below conditions in the past, but at levels greater than under Alternatives 3 or 4.

##### **4.6.2.1 Summary of Scenario Differences**

Under Alternative 2, Scenario A (high abundance and Canadian/Alaskan fisheries similar to those in 2003) is predicted to result in the highest levels of commercial and sport fishing activity, followed by Scenario B (high abundance with maximum Canadian/Alaskan fisheries); Scenario C (30% reduction in abundance with Canadian/Alaskan fisheries similar to 2003); and Scenario D (30% reduction in abundance with maximum Canadian/Alaskan fisheries). The differences in commercial and sport fishing activity are predicted to be relatively large across the four scenarios. Compared to commercial harvests under Scenario A, which are predicted to total an estimated 3.4 million pounds, Scenario B is

1 predicted to result in harvests that would be approximately 99 percent of the levels under Scenario A;  
2 Scenario C harvests are predicted to be 84 percent of Scenario A levels; and Scenario D harvests are  
3 predicted to be 83 percent of Scenario A levels. In terms of sport fishing activity, Scenario B is  
4 predicted to result in angler trips that would be approximately 96 percent of the 231,900 Scenario A  
5 trips; Scenario C trips are predicted to be 71 percent of Scenario A trips; and Scenario D trips are  
6 predicted to be 67 percent of Scenario A trips.

7 **4.6.2.2 Comparison of the Management Unit-Based Escapement Alternative (Alternative 2) to**  
8 **the Proposed Action**

9 Relative to the Proposed Action, Alternative 2 is predicted to result in substantially reduced levels of  
10 commercial salmon harvests and sport fishing activity. Consequently, sales, employment, and personal  
11 income generated by commercial salmon harvests and sport fishing expenditures and net economic  
12 value also are predicted to be substantially smaller under Alternative 2 compared to the Proposed  
13 Action (Tables 4.6-5, 4.6-9, 4.6-13, 4.6-17 and 4.6-19). The reduction in net economic value (Table  
14 4.6-18) associated with commercial fishing is predicted to be greater than the value under baseline  
15 conditions (the Proposed Action), because of the costs to society of unemployed labor resources and  
16 the expected loss in the value of capital investments (i.e., boats and equipment).

17 Under Alternative 2, Scenario B, commercial salmon harvests are predicted to be reduced by nearly  
18 100 percent for non-tribal fishers and 72 percent for tribal fishers (Table 4.6-6), relative to levels under  
19 the Proposed Action, Scenario B. For sport fishing, angler trips are predicted to be reduced by 84  
20 percent (Table 4.6-8). The severity of commercial and sport fishing effects is predicted to vary among  
21 the three economic regions within the Puget Sound Action Area. For non-tribal commercial salmon  
22 fishermen, harvest reductions are expected to be largest in the North Puget Sound and South Puget  
23 Sound/South Hood Canal regions, where commercial harvests are predicted to be eliminated;  
24 conversely, non-tribal commercial salmon harvests are expected to increase by 22 percent in the Strait  
25 of Juan de Fuca/North Hood Canal region (Table 4.6-6). For tribal commercial salmon fishermen,  
26 harvest reductions are predicted to range from 43 percent in the South Puget Sound/South Hood Canal  
27 region to 97 percent in the Strait of Juan de Fuca/North Hood Canal Region. Reductions in sport  
28 fishing trips are predicted to be substantial for all regions, ranging from 77 percent in the North Puget  
29 Sound region to 98 percent in the Strait of Juan de Fuca/North Hood Canal region (Table 4.6-8). For all  
30 regions, sport-fishing trips are expected to be eliminated in marine areas, with sport fishing for salmon  
31 limited to freshwater tributaries to Puget Sound. Under Scenario B, effects on regional sales,  
32 employment, and personal income are expected to follow the general direction and severity of regional  
33 changes in commercial harvests and sport fishing activity (Tables 4.6-7 and 4.6-9).

For Scenarios A, C, or D, Alternative 2 is expected to result in commercial and sport fishing impacts relative to the Proposed Action similar to those described for Scenario B. For non-tribal commercial salmon fishermen, reductions in harvests are anticipated to be nearly 100 percent under each scenario (Tables 4.6-2, 4.6-10, and 4.6-14). For tribal fishermen, harvest reductions are estimated to range from 72 percent under Scenario A (Table 4.6-2), to 76 percent under Scenarios C or D (Tables 4.6-10 and 4.6-14). Overall reductions in sport angler trips are predicted to range from 84 percent under Scenario A (Table 4.6-4), to 89 percent under Scenario D (Table 4.6-16).

In conclusion, the local economic effects of Alternative 2 under all scenarios are anticipated to be substantial and adverse relative to conditions under the Proposed Action for all three regions of the Puget Sound Action Area (Table 4.6-1). These effects would be most severe in communities dependent upon commercial fishing and sport fishing activities, and, potentially, in communities with seafood processing facilities. While substantially adverse in local areas, the adverse economic effects of Alternative 2 are anticipated to be low when viewed in the context of the overall economy of each region, because the estimated reductions in sales, employment, and personal income under the alternatives would be minor compared to total levels for each region. For example, total reductions in commercial and sport fishing-related employment under the worst case scenario (i.e., Scenario D) would be an estimated 621 full-time equivalent jobs in the North Puget Sound region, 368 jobs in the Strait of Juan de Fuca/North Hood Canal region, and 200 jobs in the South Puget Sound/South Hood Canal region (Table 4.6-17). Based on regional employment levels in 2000 (see Table 3.6-4), these job losses would represent 0.1 percent of the total jobs in the North Puget Sound region, 0.8 percent of the jobs in the Strait of Juan de Fuca/North Hood Canal region, and less than 0.1 percent of the jobs in the South Puget Sound/South Hood Canal region.

#### **4.6.3 Alternative 3 – Escapement Goal Management at the Population Level with Terminal Fisheries Only**

Alternative 3, the population unit-based escapement alternative, is predicted to result in commercial and sport fishing activities at levels similar to Alternative 2, but substantially below past conditions.

##### **4.6.3.1 Summary of Scenario Differences**

Under Alternative 3, Scenario A (high abundance and Canadian/Alaskan fisheries similar to those in 2003) is predicted to result in the highest levels of commercial and sport fishing activity, followed by Scenario B (high abundance with maximum Canadian/Alaskan fisheries); Scenario C (30% reduction in abundance with Canadian/Alaskan fisheries similar to 2003); and Scenario D (30% reduction in abundance with maximum Canadian/Alaskan fisheries). The differences in commercial and sport

fishing activity are relatively large across the four scenarios. Compared to commercial harvests under Scenario A, which would total an estimated 2.8 million pounds, Scenario B is predicted to result in harvests that would be about 99 percent of the levels under Scenario A; Scenario C harvests would be 90 percent of Scenario A levels; and Scenario D harvests would be 89 percent of Scenario A levels. In terms of sport fishing activity, Scenario B is predicted to result in angler trips that would be about 95 percent of the 177,500 Scenario A trips; Scenario C trips would be 76 percent of Scenario A trips; and Scenario D trips would be 71 percent of Scenario A trips.

#### **4.6.3.2 Comparison of the Population Unit-Based Escapement Alternative (Alternative 3) to the Proposed Action**

Relative to the Proposed Action, Alternative 3 is predicted to result in substantially reduced levels of commercial salmon harvests and sport fishing activity. Consequently, sales, employment, and personal income generated by commercial salmon harvests and sport fishing expenditures and net economic value also are predicted be substantially smaller under Alternative 3 compared to the Proposed Action (Tables 4.6-5, 4.6-9, 4.6-13, 4.6-17 and 4.6-19). Similar to Alternative 2, the reduction in net economic value (Table 4.6-18) associated with commercial fishing is predicted to be greater than the value under baseline conditions (the Proposed Action) because of the costs to society of unemployed labor resources and the expected loss in the value of capital investments (i.e., boats and equipment).

Under Alternative 3, Scenario B, the severity of regional commercial and sport fishing effects are predicted to be similar to those previously described for Alternative 2 for all regions other than the North Puget Sound region. Within the North Puget Sound region, reductions in tribal commercial harvests and sport fishing trips are predicted to be slightly more severe than under Alternative 2 (Tables 4.6-6 and 4.6-8). Effects on regional sales, employment, and personal income under Alternative 3, Scenario B, are predicted to follow the general direction and severity of regional changes in commercial harvests and sport fishing activity (Tables 4.6-7 and 4.6-9).

For Scenarios A, C, or D, Alternative 3 is expected to result in commercial and sport fishing impacts relative to the Proposed Action similar to those described for Scenario B. For non-tribal commercial salmon fishermen, reductions in harvests are anticipated to be nearly 100 percent under each scenario (Tables 4.6-2, 4.6-10, and 4.6-14). For tribal fishermen, harvest reductions are estimated to range from 77 percent under Scenario A (Table 4.6-2), to 79 percent under Scenarios C or D (Tables 4.6-10 and 4.6-14). Overall reductions in sport angler trips are predicted to range from 88 percent under Scenario A (Table 4.6-4), to 91 percent under Scenario D (Table 4.6-16).

1 In conclusion, the local economic effects of Alternative 3 under all scenarios are anticipated to be  
2 substantial and adverse relative to conditions under the Proposed Action for all three regions of the  
3 Puget Sound Action Area (Table 4.6-1). These effects would be most severe in communities dependent  
4 upon commercial fishing and sport fishing activities, and, potentially, in communities with seafood  
5 processing facilities. While substantially adverse in local areas, the adverse economic effects of  
6 Alternative 3 are anticipated to be low when viewed in the context of the overall economy of each  
7 region, because the estimated reductions in sales, employment, and personal income under the  
8 alternatives would be minor compared to total levels for each region. For example, total reductions in  
9 commercial and sport fishing-related employment under the worst case scenario (i.e., Scenario D)  
10 would be an estimated 645 full-time equivalent jobs in the North Puget Sound region, 370 jobs in the  
11 Strait of Juan de Fuca/North Hood Canal region, and 200 jobs in the South Puget Sound/South Hood  
12 Canal region (Table 4.6-17). Based on regional employment levels in 2000 (see Table 3.6-4), these job  
13 losses would represent 0.1 percent of the total jobs in the North Puget Sound region, 0.8 percent of the  
14 jobs in the Strait of Juan de Fuca/North Hood Canal region, and less than 0.1 percent of the jobs in the  
15 South Puget Sound/South Hood Canal region.

#### 16 **4.6.4 Alternative 4 – No Action/No Authorized Take**

17 Alternative 4, the no authorized take alternative, would substantially limit commercial and sport fishing  
18 activities, resulting in activity levels substantially below conditions in the past or under Alternative 2 or  
19 Alternative 3.

##### 20 **4.6.4.1 Summary of Scenario Differences**

21 Under Alternative 4, effects on commercial and sport fishing activity are predicted to be virtually the  
22 same across all four scenarios, with commercial salmon harvests of about 429,000 pounds and sport  
23 fishing activity of 4,300 trips.

##### 24 **4.6.4.2 Comparison of the No Action/No Authorized Take Alternative (Alternative 4) to the** 25 **Proposed Action**

26 Relative to the Proposed Action, Alternative 4 is predicted to eliminate almost all levels of commercial  
27 salmon harvests and sport fishing activity in the Puget Sound area. Consequently, sales, employment,  
28 and personal income generated by commercial salmon harvests and sport fishing expenditures and net  
29 economic value also are predicted be virtually eliminated (Tables 4.6-5, 4.6-9, 4.6-13, 4.6-17 and 4.6-  
30 19). Similar to Alternative 2 or Alternative 3, the reduction in net economic value (Table 4.6-18)  
31 associated with commercial fishing is predicted to be greater than the value under baseline conditions

(the Proposed Action) because of the costs to society of unemployed labor resources and the expected loss in the value of capital investments (i.e., boats and equipment).

Under Alternative 4, Scenario B (high abundance with maximum Canadian/Alaskan fisheries), commercial salmon harvests are predicted to be reduced by 100 percent for non-tribal fishers and by 96 percent for tribal fishers (Table 4.6-6). Commercial salmon fishing is predicted to be virtually eliminated in the North Puget Sound and Strait of Juan de Fuca/North Hood Canal regions (Table 4.6-6). Within the South Puget Sound/South Hood Canal Region, tribal harvest is expected to be reduced by 91 percent compared to harvest levels under the Proposed Action. For sport fishing under Alternative 4 (Scenario B), total angler trips and net economic value would be reduced by more than 99 percent (Tables 4.6-8 and 4.6-19). Within all regions, sport fishing is predicted to be limited to a very small number of freshwater sport fishing trips (Table 4.6-8). Adverse effects on regional sales, employment, and personal income generated by changes in commercial harvests and sport fishing activity are predicted to be substantial in all regions (Table 4.6-9).

For Scenarios A (high abundance and Canadian/Alaskan fisheries similar to those in 2003); C (30% reduction in abundance with Canadian and Alaskan fisheries similar to 2003); or D (30% reduction in abundance with maximum Canadian and Alaskan fisheries), Alternative 4 is expected to result in commercial and sport fishing impacts relative to the Proposed Action virtually the same as those described for Scenario B, with commercial harvests and sport fishing trips virtually eliminated in all regions within the Puget Sound Action Area (Tables 4.6-2, 4.6-4, 4.6-10, 4.6-12, 4.6-14, and 4.6-16).

In conclusion, the local economic effects of Alternative 4 under all scenarios are anticipated to be substantial and adverse relative to conditions under the Proposed Action for all three regions of the Puget Sound Action Area (Table 4.6-1). These effects would be most severe in communities dependent upon commercial fishing and sport fishing activities, and, potentially, in communities with seafood processing facilities. While substantially adverse in local areas, the adverse economic effects of Alternative 4 are anticipated to be low when viewed in the context of the overall economy of each region, because the estimated reductions in sales, employment, and personal income under the alternatives would be minor compared to total levels for each region. For example, total reductions in commercial and sport fishing-related employment under the worst case scenario (i.e., Scenario D) would be an estimated 660 full-time equivalent jobs in the North Puget Sound region, 373 jobs in the Strait of Juan de Fuca/North Hood Canal region, and 276 jobs in the South Puget Sound/South Hood Canal region (Table 4.6-17). Based on regional employment levels in 2000 (see Table 3.6-4), these job losses would represent 0.1 percent of the total jobs in the North Puget Sound region, 0.8 percent of the

1 jobs in the Strait of Juan de Fuca/North Hood Canal region, and less than 0.1 percent of the jobs in the  
2 South Puget Sound/South Hood Canal region.

#### 3 **4.6.5 Summary**

4 In summary, compared to the Proposed Action, Alternative 4 is predicted to have the most severe effect  
5 on the commercial and sport harvest of salmon and on regional economic activity, followed by  
6 Alternatives 3 and 2.

7 Under Alternatives 2, 3, or 4 for all scenarios, the virtual elimination of marine fishing and substantial  
8 restrictions on freshwater fishing would be expected to greatly reduce statewide and regional economic  
9 activity associated with Puget Sound commercial and sport fisheries. Under Scenario B (high  
10 abundance with maximum Canadian/Alaskan fisheries), total statewide salmon harvester and processor  
11 sales generated by the Puget Sound fishery are predicted to fall from \$26.9 million under the Proposed  
12 Action to \$4.3 million under Alternative 2, \$3.6 million under Alternative 3, and \$438,000 under  
13 Alternative 4 (Table 4.6-9). For Scenario B, similar reductions, ranging from 85 percent under  
14 Alternative 2 to 98 percent under Alternative 4, are predicted to occur in total employment and  
15 personal income generated by commercial salmon fishing and processing (Table 4.6-9). Statewide  
16 economic effects resulting from reductions in sport fishing activity are predicted to be much less severe  
17 than effects resulting from reduced commercial harvests because, on a statewide level, net sport  
18 fishing-related effects would be generated only by reductions in trip-related spending by persons  
19 residing outside of Washington, who account for a small portion of total trips. Reductions in angler  
20 trips and trip-related expenditures by Washington residents would have little effect because changes in  
21 spending by residents would merely redirect money already in the state economy, resulting in no net  
22 economic effects. As a result, sales, employment, and personal income in Washington related to sport  
23 fishing in Puget Sound are predicted to decline by only about 6 percent for all alternatives under  
24 Scenario B compared to levels under the Proposed Action (Table 4.6-9).

25 Among the three economic regions surrounding Puget Sound, all but the South Puget Sound/South  
26 Hood Canal region are predicted to lose more than 94 percent of the local and regional sales,  
27 employment, and personal income generated by commercial salmon fishing in the Puget Sound fishery  
28 under Scenario B of the three alternatives (Table 4.6-9). Reductions in commercial salmon fishing-  
29 related economic activity in the South Puget Sound/South Hood Canal region are predicted to range  
30 from 65 percent under Alternatives 2 or 3, to 95 percent under Alternative 4.



1 As with statewide effects, regional economic impacts resulting from reductions in sport fishing activity  
2 associated with the Puget Sound fishery are anticipated to be less severe than commercial fishing  
3 impacts. This is because economic effects in each region would result only from reductions in fishing  
4 trips and expenditures associated with out-of-region anglers who account for a relatively small  
5 percentage of angler activity. Under Scenario B, reductions in sport fishing-related economic activity  
6 (i.e., sales, employment, and personal income) are predicted to be largest in the Strait of Juan de  
7 Fuca/North Hood Canal region, ranging between 69 and 72 percent (Table 4.6-9). In the North Puget  
8 Sound region, reductions in sport fishing-related economic activity are predicted to range from about  
9 21 percent under Alternative 2 to about 27 percent under Alternative 4. Reductions in economic  
10 activity in the South Puget Sound/South Hood Canal region are predicted to range from about 12  
11 percent under Alternative 2 to about 15 percent under Alternative 4 (Table 4.6-9).

12 For Scenarios A (high abundance and Canadian/Alaskan fisheries similar to those in 2003); C (30%  
13 reduction in abundance with Canadian and Alaskan fisheries similar to 2003); or D (30% reduction in  
14 abundance with maximum Canadian and Alaskan fisheries), Alternatives 2, 3, or 4 are predicted to  
15 result in regional economic impacts relative to the Proposed Action similar to those described for  
16 Scenario B although effects are generally predicted to be greatest under Scenario D. For Scenarios A,  
17 C, or D, total statewide salmon harvester and processor sales generated by the Puget Sound fishery are  
18 predicted to fall from 84 to 87 percent with Alternative 2; 87 to 88 percent with Alternative 3; and 98  
19 percent with Alternative 4 (Tables 4.6-5, 4.6-13, 4.6-17). Similar reductions, ranging from 84 to 87  
20 percent with Alternative 2, to 98 percent with Alternative 4, are predicted to occur in total employment  
21 and personal income generated by commercial salmon fishing and processing (Tables 4.6-5, 4.6-13,  
22 and 4.6-17). Under Scenarios A, C, or D, sales, employment, and personal income in Washington  
23 related to sport fishing in Puget Sound are predicted to decline by only about 6 to 7 percent for all  
24 alternatives compared to levels under the Proposed Action (Tables 4.6-5, 4.6-13, and 4.6-17).

25 In conclusion, the local economic effects of Alternatives 2, 3, or 4 are predicted to be substantial and  
26 adverse relative to conditions under the Proposed Action for all three regions of the Puget Sound  
27 Action Area (Table 4.6-1). These effects would be most severe in communities dependent upon  
28 commercial fishing and sport fishing activities, and, potentially, in communities with seafood  
29 processing facilities. While substantially adverse in local areas, the adverse economic effects of the  
30 three alternatives would be low when viewed in the context of the overall economy of each region,  
31 because the estimated reductions in sales, employment, and personal income under the alternatives  
32 would be minor compared to total levels for each region. For example, total reductions in commercial

1 and sport fishing-related employment under the worst case alternative and scenario (i.e., Alternative 4,  
2 Scenario D) would be an estimated 660 full-time equivalent jobs in the North Puget Sound region, 373  
3 jobs in the Strait of Juan de Fuca/North Hood Canal region, and 276 jobs in the South Puget  
4 Sound/South Hood Canal region (Table 4.6-17). Based on regional employment levels in 2000 (see  
5 Table 3.6-4), these job losses would represent 0.1 percent of total jobs in the North Puget Sound region,  
6 0.8 percent of jobs in the Strait of Juan de Fuca/North Hood Canal region, and less than 0.1 percent of  
7 jobs in the South Puget Sound/South Hood Canal region.

Table 4.6-1. Performance of economic indicators under alternatives 1-4 relative to conservation standards under scenarios 1-4.

	Alternative 2 Compared to Alternative 1								Alternative 3 Compared to Alternative 1								Alternative 4 Compared to Alternative 1							
	Scenario A		Scenario B		Scenario C		Scenario D		Scenario A		Scenario B		Scenario C		Scenario D		Scenario A		Scenario B		Scenario C		Scenario D	
	Type	Extent	Type	Extent	Type	Extent	Type	Extent	Type	Extent	Type	Extent	Type	Extent	Type	Extent	Type	Extent	Type	Extent	Type	Extent	Type	Extent
<b>North Puget Sound:</b>																								
Sales by commercial salmon harvesters & processors	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Net economic value of commercial salmon fishing	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Sales by businesses to sport fishing anglers	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Sport fishing angler days	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Net economic value to sport fishing anglers	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Regional employment	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Regional personal income	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
<b>South Puget Sound/South Hood Canal:</b>																								
Sales by commercial salmon harvesters & processors	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Net economic value of commercial salmon fishing	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Sales by businesses to sport fishing anglers	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Sport fishing angler days	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Net economic value to sport fishing anglers	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Regional employment	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Regional personal income	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
<b>Strait of Juan de Fuca/North Hood Canal:</b>																								
Sales by commercial salmon harvesters & processors	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Net economic value of commercial salmon fishing	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Sales by businesses to sport fishing anglers	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Sport fishing angler days	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Net economic value to sport fishing anglers	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Regional employment	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
Regional personal income	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
<div><div>Impact type:</div><div>Beneficial</div><div>Adverse</div><div>No impact</div></div> <div><div>B</div><div>A</div><div>NI</div></div> <div><div>Impact extent:</div><div>No impact (0%)</div><div>Low (&lt;2%)</div><div>Moderate (2%-10%)</div><div>Substantial (&gt;10%)</div></div> <div><div>O</div><div>L</div><div>M</div><div>S</div></div>																								



# Section 4 – Environmental Consequences

Table 4.6-2. Impacts to commercial harvest, commercial harvest value, and processing value.

Scenario A: 2003 Abundance and 2003 Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Management Unit Level			Alternative 3 - Escapement Goal Management at the Population Level			Alternative 4 - No Fishing		
		Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change
Puget Sound North:										
Non-Tribal										
Harvest (pounds)	5,567,330	3,032	-5,564,298	-99.9%	3,032	-5,564,298	-99.9%	0	-5,567,330	-100.0%
Harvest Value	\$2,665,002	\$1,434	-\$2,663,568	-99.9%	\$1,434	-\$2,663,568	-99.9%	\$0	-\$2,665,002	-100.0%
Tribal										
Harvest (pounds)	6,725,730	643,255	-6,082,476	-90.4%	14,081	-6,711,649	-99.8%	13,312	-6,712,418	-99.8%
Harvest Value	\$3,136,631	\$218,197	-\$2,918,434	-93.0%	\$4,189	-\$3,132,442	-99.9%	\$3,874	-\$3,132,758	-99.9%
Processing Value	\$11,521,724	\$537,194	-\$10,984,530	-95.3%	\$13,965	-\$11,507,759	-99.9%	\$10,390	-\$11,511,334	-99.9%
South Puget Sound/South Hood Canal:										
Non-Tribal										
Harvest (pounds)	2,516,170	0	-2,516,170	-100.0%	0	-2,516,170	-100.0%	0	-2,516,170	-100.0%
Harvest Value	\$627,257	\$0	-\$627,257	-100.0%	\$0	-\$627,257	-100.0%	\$0	-\$627,257	-100.0%
Tribal										
Harvest (pounds)	4,805,614	2,720,759	-2,084,856	-43.4%	2,720,759	-2,084,856	-43.4%	411,387	-4,394,227	-91.4%
Harvest Value	\$1,757,387	\$936,614	-\$820,773	-46.7%	\$936,614	-\$820,773	-46.7%	\$100,265	-\$1,657,123	-94.3%
Processing Value	\$6,604,154	\$2,637,459	-\$3,966,695	-60.1%	\$2,637,459	-\$3,966,695	-60.1%	\$315,147	-\$6,289,007	-95.2%
Strait of Juan de Fuca/North Hood Canal:										
Non-Tribal										
Harvest (pounds)	10,920	13,340	2,420	22.2%	13,340	2,420	22.2%	0	-10,920	-100.0%
Harvest Value	\$5,132	\$6,270	\$1,138	22.2%	\$6,270	\$1,138	22.2%	\$0	-\$5,132	-100.0%
Tribal										
Harvest (pounds)	420,792	13,559	-407,233	-96.8%	13,559	-407,233	-96.8%	4,255	-416,537	-99.0%
Harvest Value	\$292,912	\$6,658	-\$286,254	-97.7%	\$6,658	-\$286,254	-97.7%	\$2,841	-\$290,071	-99.0%
Processing Value	\$513,111	\$28,214	-\$484,897	-94.5%	\$28,214	-\$484,897	-94.5%	\$5,567	-\$507,544	-98.9%
Statewide Total:										
<sup>1</sup> Marine trips include all local resident, non-local resident, and non-resident of the state sport fishing in the marine waters of Puget Sound and originating from a marina or launch area										
Harvest (pounds)	8,094,420	16,372	-8,078,048	-99.8%	16,372	-8,078,048	-99.8%	0	-8,094,420	-100.0%
Within the region identified	\$3,297,391	\$7,704	-\$3,289,688	-99.8%	\$7,704	-\$3,289,688	-99.8%	\$0	-\$3,297,391	-100.0%
<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that										
Harvest (pounds)	11,952,137	3,377,573	-8,574,564	-71.7%	2,748,399	-9,203,737	-77.0%	428,954	-11,523,183	-96.4%
Harvest Value	\$5,186,931	\$1,161,469	-\$4,025,462	-77.6%	\$947,461	-\$4,239,470	-81.7%	\$106,979	-\$5,079,952	-97.9%
Processing Value	\$18,638,990	\$3,202,867	-\$15,436,123	-82.8%	\$2,679,638	-\$15,959,351	-85.6%	\$331,105	-\$18,307,885	-98.2%

Note: All dollar values are expressed in 2002 dollars.



Section 4 – Environmental Consequences

Table 4.6-3. Direct economic impacts to the commercial fishing and salmon processing industries.

Scenario A: 2003 Abundance and 2003 Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Management Unit Level			Alternative 3 - Escapement Goal Management at the Population Level			Alternative 4 - No Fishing		
		Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change
Puget Sound North Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	972.7	0.5	-972.2	-99.9%	0.5	-972.2	-99.9%	0.0	-972.7	-100.0%
Employment <sup>2</sup>	67.2	0.0	-67.1	-100.0%	0.0	-67.1	-100.0%	0.0	-67.2	-100.0%
Personal Income <sup>3</sup>	\$1,725,198	\$648	-\$1,724,549	-100.0%	\$648	-\$1,724,549	-100.0%	\$0	-\$1,725,198	-100.0%
Tribal:										
Jobs <sup>1</sup>	1,590.3	110.6	-1,479.6	-93.0%	2.1	-1,588.1	-99.9%	2.0	-1,588.3	-99.9%
Employment <sup>2</sup>	76.1	7.8	-68.3	-89.7%	0.1	-76.0	-99.9%	0.1	-76.1	-99.9%
Personal Income <sup>3</sup>	\$1,955,153	\$179,310	-\$1,775,843	-90.8%	\$1,467	-\$1,953,687	-99.9%	\$1,304	-\$1,953,850	-99.9%
Processing Sector:										
Employment <sup>2</sup>	181.5	9.6	-172.0	-94.7%	0.3	-181.3	-99.9%	0.2	-181.3	-99.9%
Personal Income <sup>3</sup>	\$4,569,379	\$241,311	-\$4,328,068	-94.7%	\$6,365	-\$4,563,014	-99.9%	\$4,922	-\$4,564,457	-99.9%
South Puget Sound/South Hood Canal:										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	228.9	0.0	-228.9	-100.0%	0.0	-228.9	-100.0%	0.0	-228.9	-100.0%
Employment <sup>2</sup>	7.4	0.0	-7.4	-100.0%	0.0	-7.4	-100.0%	0.0	-7.4	-100.0%
Personal Income <sup>3</sup>	\$185,657	\$0	-\$185,657	-100.0%	\$0	-\$185,657	-100.0%	\$0	-\$185,657	-100.0%
Tribal:										
Jobs <sup>1</sup>	891.0	474.9	-416.1	-46.7%	474.9	-416.1	-46.7%	50.8	-840.2	-94.3%
Employment <sup>2</sup>	30.3	19.4	-10.9	-36.0%	19.4	-10.9	-36.0%	1.3	-29.0	-95.8%
Personal Income <sup>3</sup>	\$761,987	\$433,255	-\$328,732	-43.1%	\$433,255	-\$328,732	-43.1%	\$28,289	-\$733,698	-96.3%
Processing Sector:										
Employment <sup>2</sup>	94.4	35.1	-59.3	-62.8%	35.1	-59.3	-62.8%	5.3	-89.1	-94.4%
at a marina or launch area	\$2,442,028	\$908,621	-\$1,533,406	-62.8%	\$908,621	-\$1,533,406	-62.8%	\$136,498	-\$2,305,529	-94.4%
Strait of Juan de Fuca/North Hood Canal:										
<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.										
cause it is assumed that										
Jobs <sup>1</sup>	1.9	2.3	0.4	22.2%	2.3	0.4	22.2%	0.0	-1.9	-100.0%
Employment <sup>2</sup>	0.1	0.1	0.0	37.9%	0.1	0.0	37.9%	0.0	-0.1	-100.0%
Personal Income <sup>3</sup>	\$2,180	\$2,664	\$483	22.2%	\$2,664	\$483	22.2%	\$0	-\$2,180	-100.0%
Tribal:										
Jobs <sup>1</sup>	148.5	3.4	-145.1	-97.7%	3.4	-145.1	-97.7%	1.4	-147.1	-99.0%
Employment <sup>2</sup>	5.0	0.1	-4.9	-97.3%	0.1	-4.9	-97.3%	0.1	-5.0	-99.0%
Personal Income <sup>3</sup>	\$128,362	\$3,008	-\$125,354	-97.7%	\$3,008	-\$125,354	-97.7%	\$1,150	-\$127,212	-99.1%
Note: Sport fishing-related effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state										
Employment <sup>2</sup>	6.3	0.4	-5.9	-93.7%	0.4	-5.9	-93.7%	0.1	-6.2	-99.0%
Personal Income <sup>3</sup>	\$159,926	\$10,032	-\$149,894	-93.7%	\$10,032	-\$149,894	-93.7%	\$1,568	-\$158,357	-99.0%
State:										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	1,203.5	2.8	-1,200.7	-99.8%	2.8	-1,200.7	-99.8%	0.0	-1,203.5	-100.0%
Employment <sup>2</sup>	71.0	0.1	-70.9	-99.8%	0.1	-70.9	-99.8%	0.0	-71.0	-100.0%
Residents of Washington:	\$1,807,511	\$3,167	-\$1,804,344	-99.8%	\$3,167	-\$1,804,344	-99.8%	\$0	-\$1,807,511	-100.0%
Tribal:										
Jobs <sup>1</sup>	2,629.8	588.9	-2,040.9	-77.6%	480.4	-2,149.4	-81.7%	54.2	-2,575.5	-97.9%
Employment <sup>2</sup>	107.8	27.2	-80.6	-74.8%	19.8	-88.0	-81.6%	1.3	-106.5	-98.8%
Personal Income <sup>3</sup>	\$2,740,275	\$617,253	-\$2,123,022	-77.5%	\$450,798	-\$2,289,477	-83.5%	\$30,700	-\$2,709,575	-98.9%
Processing Sector:										
Employment <sup>2</sup>	280.9	47.5	-233.4	-83.1%	38.6	-242.3	-86.3%	5.9	-274.9	-97.9%
Personal Income <sup>3</sup>	\$7,137,841	\$1,207,994	-\$5,929,847	-83.1%	\$981,271	-\$6,156,570	-86.3%	\$151,154	-\$6,986,687	-97.9%

Note: Regional totals may not sum up to statewide totals because of differences in regional and statewide employment and personal income coefficients generated by the FEAM model.

<sup>1</sup> Represents full- and part-time jobs.

<sup>2</sup> Represents full-time equivalent jobs.

<sup>3</sup> Personal income, expressed in 2002 dollars, includes employee compensation, proprietor income, and other property income.





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Table 4.6-4. Impacts to sport fishing trips and expenditures by region.  
Scenario A: 2003 Abundance and 2003 Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Unit Level		Alternative 3 - Escapement Goal Management at the Population Level		Alternative 4 - No Fishing	
		Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change
North Puget Sound:							
Marine trips originating from the region <sup>1</sup>	125,372	-125,372	-100.0%	-125,372	-100.0%	-125,372	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	371,857	-251,911	-67.7%	-300,883	-80.9%	-369,806	-99.4%
Total trips	497,229	-377,283	-75.9%	-426,255	-85.7%	-495,178	-99.6%
Expenditures in the region <sup>3</sup>	\$31,974,199	-\$6,208,411	-19.4%	-\$7,114,001	-22.2%	-\$8,388,511	-26.2%
South Puget Sound/South Hood Canal:							
Marine trips originating from the region <sup>1</sup>	238,655	-238,655	-100.0%	-238,655	-100.0%	-238,655	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	288,616	-185,801	-64.4%	-185,799	-64.4%	-286,497	-99.3%
Total trips	527,271	-424,456	-80.5%	-424,454	-80.5%	-525,152	-99.6%
Expenditures in the region <sup>3</sup>	\$33,074,640	-\$3,740,707	-11.3%	-\$3,740,642	-11.3%	-\$4,736,183	-14.3%
Strait of Juan de Fuca/North Hood Canal:							
Marine trips originating from the region <sup>1</sup>	359,534	-359,534	-100.0%	-359,534	-100.0%	-359,534	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	58,578	-49,398	-84.3%	-54,840	-93.6%	-58,438	-99.8%
Total trips	418,112	-408,932	-97.8%	-414,374	-99.1%	-417,972	-100.0%
Expenditures in the region <sup>3</sup>	\$24,456,744	-\$16,765,658	-68.6%	-\$16,973,950	-69.4%	-\$17,111,689	-70.0%
Regional Total:							
Marine trips originating from the region <sup>1</sup>	723,561	-723,561	-100.0%	-723,561	-100.0%	-723,561	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	719,051	-487,110	-67.7%	-541,522	-75.3%	-714,741	-99.4%
Total trips	1,442,612	-1,210,671	-83.9%	-1,265,083	-87.7%	-1,438,302	-99.7%
Expenditures in the region <sup>3</sup>	\$89,505,583	-\$26,714,777	-29.8%	-\$27,828,594	-31.1%	-\$30,236,383	-33.8%

Note: Detailed information for angler types is included in the Economics Technical Appendix (Appendix D).

<sup>1</sup> Marine trips include all local resident, non-local resident, and non-resident of the state sport fishing in the marine waters of Puget Sound and originating from a marina or launch area; originating from a marina or launch area in the region identified.

<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.

<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that because it is assumed that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.



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Table 4.6-5. Regional economic impacts of the alternatives.

Scenario A: 2003 Abundance and 2003 Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Unit Level		Alternative 3 - Escapement Goal Management at the Population Level		Alternative 4 - No Fishing	
		Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change
North Puget Sound:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$17,323,358	-\$16,566,533	-95.6%	-\$17,303,770	-99.9%	-\$17,309,094	-99.9%
Employment <sup>2</sup>	522.5	-495.8	-94.9%	-521.9	-99.9%	-522.1	-99.9%
Personal Income <sup>3</sup>	\$16,727,041	-\$15,874,356	-94.9%	-\$16,709,879	-99.9%	-\$16,714,413	-99.9%
Sport Fishing Effects							
Sales <sup>4</sup>	\$31,974,199	-\$6,208,411	-19.4%	-\$7,114,001	-22.2%	-\$8,388,511	-26.2%
Employment <sup>2</sup>	567.7	-118.2	-20.8%	-135.2	-23.8%	-159.0	-28.0%
Personal Income <sup>3</sup>	\$21,520,877	-\$4,216,375	-19.6%	-\$4,835,613	-22.5%	-\$5,707,116	-26.5%
South Puget Sound/South Hood Canal:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$8,988,798	-\$5,414,725	-60.2%	-\$5,414,725	-60.2%	-\$8,573,387	-95.4%
Employment <sup>2</sup>	223.1	-134.9	-60.4%	-134.9	-60.4%	-212.3	-95.1%
Personal Income <sup>3</sup>	\$8,061,452	-\$4,870,679	-60.4%	-\$4,870,679	-60.4%	-\$7,669,101	-95.1%
Sport Fishing Effects							
Sales <sup>4</sup>	\$33,074,640	-\$3,740,707	-11.3%	-\$3,740,642	-11.3%	-\$4,736,183	-14.3%
Employment <sup>2</sup>	518.5	-65.0	-12.5%	-65.0	-12.5%	-81.7	-15.8%
Personal Income <sup>3</sup>	\$24,679,752	-\$2,819,364	-11.4%	-\$2,819,314	-11.4%	-\$3,578,165	-14.5%
Strait of Juan de Fuca/North Hood Canal:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$811,156	-\$770,014	-94.9%	-\$770,014	-94.9%	-\$802,748	-99.0%
Employment <sup>2</sup>	19.2	-18.2	-94.6%	-18.2	-94.6%	-19.0	-99.1%
Personal Income <sup>3</sup>	\$567,455	-\$536,783	-94.6%	-\$536,783	-94.6%	-\$562,146	-99.1%
Sport Fishing Effects							
Sales <sup>4</sup>	\$24,456,744	-\$16,765,658	-68.6%	-\$16,973,950	-69.4%	-\$17,111,689	-70.0%
g from a marina or launch are	500.5	-355.1	-70.9%	-359.2	-71.8%	-361.8	-72.3%
Personal Income <sup>3</sup>	\$14,563,148	-\$9,931,028	-68.2%	-\$10,057,788	-69.1%	-\$10,141,612	-69.6%
<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified							
<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed							
Sales <sup>1</sup>	\$27,123,312	-\$22,751,272	-83.9%	-\$23,488,509	-86.6%	-\$26,685,228	-98.4%
Employment <sup>2</sup>	748.6	-631.4	-84.4%	-656.7	-87.7%	-737.0	-98.5%
Personal Income <sup>3</sup>	\$26,023,282	-\$21,953,163	-84.4%	-\$22,828,837	-87.7%	-\$25,620,136	-98.5%
Sport Fishing Effects <sup>3</sup>							
Sales <sup>4</sup>	\$90,085,979	-\$5,218,618	-5.8%	-\$5,355,919	-5.9%	-\$5,743,798	-6.4%
Employment <sup>2</sup>	1,569.5	-97.1	-6.2%	-99.8	-6.4%	-107.5	-6.8%
Personal Income <sup>3</sup>	\$68,627,051	-\$3,947,656	-5.8%	-\$4,055,622	-5.9%	-\$4,360,625	-6.4%

Note: Sport fishing-related effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.

<sup>1</sup> Represents direct commercial salmon harvester and processing sales in 2002 dollars.

<sup>2</sup> Represents total (direct and secondary) full-time equivalent jobs.

<sup>3</sup> Represents total (direct and secondary) personal income in 2002 dollars. Personal income includes employee compensation, proprietor income, and other property income.

<sup>4</sup> Represents direct sales to sport fishing anglers in 2002 dollars.

<sup>5</sup> Under alternatives to the Proposed Action, statewide effects for sportfishing include only those generated by changes in spending by non-residents of Washington.



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Table 4.6-6. Impacts to commercial harvest, commercial harvest value, and processing value.  
Scenario B: 2003 Abundance with maximum Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Management Unit Level			Alternative 3 - Escapement Goal Management at the Population Level			Alternative 4 - No Fishing		
		Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change
Puget Sound North: Non-Tribal										
Harvest (pounds)	5,533,374	3,032	-5,530,343	-99.9%	3,032	-5,530,343	-99.9%	0	-5,533,374	-100.0%
Harvest Value	\$2,637,498	\$1,434	-\$2,636,064	-99.9%	\$1,434	-\$2,636,064	-99.9%	\$0	-\$2,637,498	-100.0%
Tribal										
Harvest (pounds)	6,691,701	640,844	-6,050,857	-90.4%	14,081	-6,677,620	-99.8%	13,310	-6,678,390	-99.8%
Harvest Value	\$3,109,566	\$216,272	-\$2,893,294	-93.0%	\$4,189	-\$3,105,377	-99.9%	\$3,873	-\$3,105,693	-99.9%
Processing Value	\$11,452,379	\$534,735	-\$10,917,644	-95.3%	\$13,965	-\$11,438,414	-99.9%	\$10,389	-\$11,441,990	-99.9%
South Puget Sound/South Hood Canal: Non-Tribal										
Harvest (pounds)	2,516,170	0	-2,516,170	-100.0%	0	-2,516,170	-100.0%	0	-2,516,170	-100.0%
Harvest Value	\$627,257	\$0	-\$627,257	-100.0%	\$0	-\$627,257	-100.0%	\$0	-\$627,257	-100.0%
Tribal										
Harvest (pounds)	4,762,847	2,685,646	-2,077,200	-43.6%	2,685,646	-2,077,200	-43.6%	411,384	-4,351,463	-91.4%
Harvest Value	\$1,730,353	\$914,493	-\$815,860	-47.1%	\$914,493	-\$815,860	-47.1%	\$100,262	-\$1,630,091	-94.2%
Processing Value	\$6,546,846	\$2,590,409	-\$3,956,437	-60.4%	\$2,590,409	-\$3,956,437	-60.4%	\$315,142	-\$6,231,703	-95.2%
Strait of Juan de Fuca/North Hood Canal: Non-Tribal										
Harvest (pounds)	10,920	13,340	2,420	22.2%	13,340	2,420	22.2%	0	-10,920	-100.0%
Harvest Value	\$5,132	\$6,270	\$1,138	22.2%	\$6,270	\$1,138	22.2%	\$0	-\$5,132	-100.0%
Tribal										
Harvest (pounds)	420,792	13,559	-407,232	-96.8%	13,559	-407,232	-96.8%	4,255	-416,537	-99.0%
Harvest Value	\$292,912	\$6,658	-\$286,254	-97.7%	\$6,658	-\$286,254	-97.7%	\$2,841	-\$290,071	-99.0%
Processing Value	\$513,111	\$28,214	-\$484,897	-94.5%	\$28,214	-\$484,897	-94.5%	\$5,567	-\$507,544	-98.9%
Statewide Total:										
Marine trips include all local resident, non-local resident, and non-resident of the state sport fishing in the marine waters of Puget Sound and originating from a marina or launch area within the region identified.										
Harvest (pounds)	8,060,464	16,372	-8,044,092	-99.8%	16,372	-8,044,092	-99.8%	0	-8,060,464	-100.0%
Harvest Value	\$3,269,887	\$7,704	-\$3,262,183	-99.8%	\$7,704	-\$3,262,183	-99.8%	\$0	-\$3,269,887	-100.0%
Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that										
Harvest (pounds)	11,875,339	3,340,050	-8,535,289	-71.9%	2,713,287	-9,162,052	-77.2%	428,949	-11,446,390	-96.4%
Harvest Value	\$5,132,831	\$1,137,423	-\$3,995,408	-77.8%	\$925,340	-\$4,207,491	-82.0%	\$106,976	-\$5,025,855	-97.9%
Processing Value	\$18,512,335	\$3,153,358	-\$15,358,978	-83.0%	\$2,632,588	-\$15,879,747	-85.8%	\$331,098	-\$18,181,237	-98.2%

Note: All dollar values are expressed in 2002 dollars.



Table 4.6-7. Direct economic impacts to the commercial fishing and salmon processing industries.  
 Scenario B: 2003 Abundance with maximum Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Management Unit Level			Alternative 3 - Escapement Goal Management at the Population Level			Alternative 4 - No Fishing		
		Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change
Puget Sound North										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	962.7	0.5	-962.2	-99.9%	0.5	-962.2	-99.9%	0.0	-962.7	-100.0%
Employment <sup>2</sup>	66.6	0.0	-66.6	-100.0%	0.0	-66.6	-100.0%	0.0	-66.6	-100.0%
Personal Income <sup>3</sup>	\$1,710,634	\$648	-\$1,709,985	-100.0%	\$648	-\$1,709,985	-100.0%	\$0	-\$1,710,634	-100.0%
Tribal:										
Jobs <sup>1</sup>	1,576.6	109.6	-1,466.9	-93.0%	2.1	-1,574.4	-99.9%	2.0	-1,574.6	-99.9%
Employment <sup>2</sup>	75.5	7.8	-67.8	-89.7%	0.1	-75.5	-99.9%	0.1	-75.5	-99.9%
Personal Income <sup>3</sup>	\$1,940,557	\$178,276	-\$1,762,282	-90.8%	\$1,467	-\$1,939,091	-99.9%	\$1,303	-\$1,939,254	-99.9%
Processing Sector:										
Employment <sup>2</sup>	180.5	9.5	-171.0	-94.7%	0.3	-180.3	-99.9%	0.2	-180.3	-99.9%
Personal Income <sup>3</sup>	\$4,543,906	\$240,408	-\$4,303,498	-94.7%	\$6,365	-\$4,537,541	-99.9%	\$4,922	-\$4,538,985	-99.9%
South Puget Sound/South Hood Canal:										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	228.9	0.0	-228.9	-100.0%	0.0	-228.9	-100.0%	0.0	-228.9	-100.0%
Employment <sup>2</sup>	7.4	0.0	-7.4	-100.0%	0.0	-7.4	-100.0%	0.0	-7.4	-100.0%
Personal Income <sup>3</sup>	\$185,657	\$0	-\$185,657	-100.0%	\$0	-\$185,657	-100.0%	\$0	-\$185,657	-100.0%
Tribal:										
Jobs <sup>1</sup>	877.3	463.6	-413.6	-47.1%	463.6	-413.6	-47.1%	50.8	-826.5	-94.2%
Employment <sup>2</sup>	29.6	18.8	-10.9	-36.7%	18.8	-10.9	-36.7%	1.3	-28.4	-95.7%
Personal Income <sup>3</sup>	\$745,461	\$419,688	-\$325,774	-43.7%	\$419,688	-\$325,774	-43.7%	\$28,288	-\$717,174	-96.2%
Processing Sector:										
Employment <sup>2</sup>	93.9	34.7	-59.2	-63.1%	34.7	-59.2	-63.1%	5.3	-88.6	-94.4%
Personal Income <sup>3</sup>	\$2,427,658	\$896,824	-\$1,530,834	-63.1%	\$896,824	-\$1,530,834	-63.1%	\$136,497	-\$2,291,161	-94.4%
Strait of Juan de Fuca/North Hood Canal:										
Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.										
g because it is assumed that										
Jobs <sup>1</sup>	1.9	2.3	0.4	22.2%	2.3	0.4	22.2%	0.0	-1.9	-100.0%
Employment <sup>2</sup>	0.1	0.1	0.0	37.9%	0.1	0.0	37.9%	0.0	-0.1	-100.0%
Personal Income <sup>3</sup>	\$2,180	\$2,664	\$483	22.2%	\$2,664	\$483	22.2%	\$0	-\$2,180	-100.0%
Tribal:										
Jobs <sup>1</sup>	148.5	3.4	-145.1	-97.7%	3.4	-145.1	-97.7%	1.4	-147.1	-99.0%
Employment <sup>2</sup>	5.0	0.1	-4.9	-97.3%	0.1	-4.9	-97.3%	0.1	-5.0	-99.0%
Personal Income <sup>3</sup>	\$128,362	\$3,008	-\$125,353	-97.7%	\$3,008	-\$125,353	-97.7%	\$1,150	-\$127,212	-99.1%
Note: Sport fishing-related effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state										
Employment <sup>2</sup>	6.3	0.4	-5.9	-93.7%	0.4	-5.9	-93.7%	0.1	-6.2	-99.0%
Personal Income <sup>3</sup>	\$159,926	\$10,032	-\$149,894	-93.7%	\$10,032	-\$149,894	-93.7%	\$1,568	-\$158,357	-99.0%
State:										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	1,193.5	2.8	-1,190.7	-99.8%	2.8	-1,190.7	-99.8%	0.0	-1,193.5	-100.0%
Employment <sup>2</sup>	70.5	0.1	-70.4	-99.8%	0.1	-70.4	-99.8%	0.0	-70.5	-100.0%
Non-residents of Washington:	\$1,793,789	\$3,167	-\$1,790,623	-99.8%	\$3,167	-\$1,790,623	-99.8%	\$0	-\$1,793,789	-100.0%
Tribal:										
Jobs <sup>1</sup>	2,602.3	576.7	-2,025.7	-77.8%	469.1	-2,133.2	-82.0%	54.2	-2,548.1	-97.9%
Employment <sup>2</sup>	106.6	26.5	-80.0	-75.1%	19.2	-87.4	-82.0%	1.3	-105.3	-98.8%
Personal Income <sup>3</sup>	\$2,709,241	\$602,090	-\$2,107,151	-77.8%	\$436,609	-\$2,272,632	-83.9%	\$30,698	-\$2,678,543	-98.9%
Processing Sector:										
Employment <sup>2</sup>	279.3	47.0	-232.3	-83.2%	38.1	-241.2	-86.4%	5.9	-273.4	-97.9%
Personal Income <sup>3</sup>	\$7,098,058	\$1,194,516	-\$5,903,543	-83.2%	\$968,659	-\$6,129,400	-86.4%	\$151,152	-\$6,946,907	-97.9%

Note: Regional totals may not sum up to statewide totals because of differences in regional and statewide employment and personal income coefficients generated by the FEAM model

<sup>1</sup> Represents full- and part-time jobs.

<sup>2</sup> Represents full-time equivalent jobs.

<sup>3</sup> Personal income, expressed in 2002 dollars, includes employee compensation, proprietor income, and other property income.





## Section 4 – Environmental Consequences

Table 4.6-8. Impacts to sport fishing trips and expenditures by region.  
Scenario B: 2003 Abundance with maximum Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Unit Level		Alternative 3 - Escapement Goal Management at the Population Level		Alternative 4 - No Fishing	
		Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change
North Puget Sound:							
Marine trips originating from the region <sup>1</sup>	125,121	-125,121	-100.0%	-125,121	-100.0%	-125,121	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	371,435	-258,296	-69.5%	-307,335	-82.7%	-369,384	-99.4%
Total trips	496,556	-383,417	-77.2%	-432,456	-87.1%	-494,505	-99.6%
Expenditures in the region <sup>3</sup>	\$31,931,283	-\$6,323,085	-19.8%	-\$7,229,930	-22.6%	-\$8,377,306	-26.2%
South Puget Sound/South Hood Canal:							
Marine trips originating from the region <sup>1</sup>	234,995	-234,995	-100.0%	-234,995	-100.0%	-234,995	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	284,800	-183,525	-64.4%	-183,523	-64.4%	-282,681	-99.3%
Total trips	519,795	-418,520	-80.5%	-418,518	-80.5%	-517,676	-99.6%
Expenditures in the region <sup>3</sup>	\$32,607,684	-\$3,686,620	-11.3%	-\$3,686,620	-11.3%	-\$4,666,871	-14.3%
Strait of Juan de Fuca/North Hood Canal:							
Marine trips originating from the region <sup>1</sup>	359,259	-359,259	-100.0%	-359,259	-100.0%	-359,259	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	58,492	-49,425	-84.5%	-54,874	-93.8%	-58,352	-99.8%
Total trips	417,751	-408,684	-97.8%	-414,133	-99.1%	-417,611	-100.0%
Expenditures in the region <sup>3</sup>	\$24,435,112	-\$16,757,867	-68.6%	-\$16,966,489	-69.4%	-\$17,099,608	-70.0%
Regional Total:							
Marine trips originating from the region <sup>1</sup>	719,375	-719,375	-100.0%	-719,375	-100.0%	-719,375	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	714,727	-491,246	-68.7%	-545,732	-76.4%	-710,417	-99.4%
Total trips	1,434,102	-1,210,621	-84.4%	-1,265,107	-88.2%	-1,429,792	-99.7%
Expenditures in the region <sup>3</sup>	\$88,974,079	-\$26,767,573	-30.1%	-\$27,883,039	-31.3%	-\$30,143,785	-33.9%

Note: Detailed information for angler types is included in the Economics Technical Appendix (Appendix D).

<sup>1</sup> Marine trips include all local resident, non-local resident, and non-resident of the state sport fishing in the marine waters of Puget Sound and originating from a marina or launch area; or launch area in the region identified.

<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.

<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.



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Table 4.6-9. Regional economic impacts of the alternatives.

Scenario B: 2003 Abundance with maximum Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Unit Level		Alternative 3 - Escapement Goal Management at the Population Level		Alternative 4 - No Fishing	
		Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change
North Puget Sound: Commercial Fishing Effects							
Sales <sup>1</sup>	\$17,199,443	-\$16,447,002	-95.6%	-\$17,179,855	-99.9%	-\$17,185,181	-99.9%
Employment <sup>2</sup>	519.0	-492.5	-94.9%	-518.5	-99.9%	-518.6	-99.9%
Personal Income <sup>3</sup>	\$16,616,225	-\$15,767,469	-94.9%	-\$16,599,062	-99.9%	-\$16,603,598	-99.9%
Sport Fishing Effects							
Sales <sup>4</sup>	\$31,931,283	-\$6,323,085	-19.8%	-\$7,229,930	-22.6%	-\$8,377,306	-26.2%
Employment <sup>2</sup>	567.0	-120.3	-21.2%	-137.3	-24.2%	-158.8	-28.0%
Personal Income <sup>3</sup>	\$21,492,002	-\$4,294,853	-20.0%	-\$4,914,949	-22.9%	-\$5,699,519	-26.5%
South Puget Sound/South Hood Canal: Commercial Fishing Effects							
Sales <sup>1</sup>	\$8,904,456	-\$5,399,554	-60.6%	-\$5,399,554	-60.6%	-\$8,489,051	-95.3%
Employment <sup>2</sup>	221.1	-134.5	-60.8%	-134.5	-60.8%	-210.3	-95.1%
Personal Income <sup>3</sup>	\$7,987,892	-\$4,857,512	-60.8%	-\$4,857,512	-60.8%	-\$7,595,547	-95.1%
Sport Fishing Effects							
Sales <sup>4</sup>	\$32,607,684	-\$3,686,620	-11.3%	-\$3,686,620	-11.3%	-\$4,666,871	-14.3%
Employment <sup>2</sup>	511.2	-64.1	-12.5%	-64.1	-12.5%	-80.5	-15.8%
Personal Income <sup>3</sup>	\$24,331,289	-\$2,778,665	-11.4%	-\$2,778,665	-11.4%	-\$3,525,860	-14.5%
Strait of Juan de Fuca/North Hood Canal: Commercial Fishing Effects							
Sales <sup>1</sup>	\$811,155	-\$770,013	-94.9%	-\$770,013	-94.9%	-\$802,747	-99.0%
Employment <sup>2</sup>	19.2	-18.2	-94.6%	-18.2	-94.6%	-19.0	-99.1%
Personal Income <sup>3</sup>	\$567,454	-\$536,782	-94.6%	-\$536,782	-94.6%	-\$562,145	-99.1%
Sport Fishing Effects							
Sales <sup>4</sup>	\$24,435,112	-\$16,757,867	-68.6%	-\$16,966,489	-69.4%	-\$17,099,608	-70.0%
from a marina or launch area	500.1	-354.9	-71.0%	-359.0	-71.8%	-361.6	-72.3%
Personal Income <sup>3</sup>	\$14,550,212	-\$9,926,446	-68.2%	-\$10,053,407	-69.1%	-\$10,134,420	-69.7%
<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.							
<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that							
Sales <sup>1</sup>	\$26,915,053	-\$22,616,569	-84.0%	-\$23,349,422	-86.8%	-\$26,476,979	-98.4%
Employment <sup>2</sup>	743.1	-627.9	-84.5%	-653.0	-87.9%	-731.6	-98.4%
Personal Income <sup>3</sup>	\$25,835,001	-\$21,828,671	-84.5%	-\$22,700,247	-87.9%	-\$25,431,863	-98.4%
Sport Fishing Effects <sup>5</sup>							
Sales <sup>4</sup>	\$89,552,061	-\$5,213,429	-5.8%	-\$5,351,019	-6.0%	-\$5,719,922	-6.4%
Employment <sup>2</sup>	1,560.4	-97.0	-6.2%	-99.7	-6.4%	-107.0	-6.9%
Personal Income <sup>3</sup>	\$68,220,788	-\$3,944,122	-5.8%	-\$4,052,314	-5.9%	-\$4,342,396	-6.4%

Note: Sport fishing-related effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state the state spending because it is assumed that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.

<sup>1</sup> Represents direct commercial salmon harvester and processing sales in 2002 dollars.

<sup>2</sup> Represents total (direct and secondary) full-time equivalent jobs.

<sup>3</sup> Represents total (direct and secondary) personal income in 2002 dollars. Personal income includes employee compensation, proprietor income, and other property income.

<sup>4</sup> Represents direct sales to sport fishing anglers in 2002 dollars.

<sup>5</sup> Under alternatives to the Proposed Action, statewide effects for sportfishing include only those generated by changes in spending by non-residents of Washington. Changes in spending by Washington residents would merely redirect money already in the state economy and would result in no net economic effects.



Section 4 – Environmental Consequences

Table 4.6-10. Impacts to commercial harvest, commercial harvest value, and processing value.  
Scenario C: 30% Reduction in abundance and 2003 Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Management Unit Level			Alternative 3 - Escapement Goal Management at the Population Level			Alternative 4 - No Fishing		
		Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change
Puget Sound North: Non-Tribal										
Harvest (pounds)	5,474,785	0	-5,474,785	-100.0%	0	-5,474,785	-100.0%	0	-5,474,785	-100.0%
Harvest Value	\$2,589,993	\$0	-\$2,589,993	-100.0%	\$0	-\$2,589,993	-100.0%	\$0	-\$2,589,993	-100.0%
Tribal										
Harvest (pounds)	6,604,161	370,510	-6,233,651	-94.4%	14,081	-6,590,080	-99.8%	13,310	-6,590,850	-99.8%
Harvest Value	\$3,039,344	\$64,176	-\$2,975,169	-97.9%	\$4,189	-\$3,035,156	-99.9%	\$3,873	-\$3,035,472	-99.9%
Processing Value	\$11,303,131	\$269,359	-\$11,033,773	-97.6%	\$11,113	-\$11,292,018	-99.9%	\$10,389	-\$11,292,742	-99.9%
South Puget Sound/South Hood Canal: Non-Tribal										
Harvest (pounds)	2,516,383	0	-2,516,383	-100.0%	0	-2,516,383	-100.0%	0	-2,516,383	-100.0%
Harvest Value	\$627,357	\$0	-\$627,357	-100.0%	\$0	-\$627,357	-100.0%	\$0	-\$627,357	-100.0%
Tribal										
Harvest (pounds)	4,605,362	2,458,337	-2,147,025	-46.6%	2,458,337	-2,147,025	-46.6%	411,384	-4,193,979	-91.1%
Harvest Value	\$1,629,120	\$771,288	-\$857,831	-52.7%	\$771,288	-\$857,831	-52.7%	\$100,262	-\$1,528,858	-93.8%
Processing Value	\$6,334,627	\$2,285,814	-\$4,048,813	-63.9%	\$2,285,814	-\$4,048,813	-63.9%	\$315,142	-\$6,019,485	-95.0%
Strait of Juan de Fuca/North Hood Canal: Non-Tribal										
Harvest (pounds)	10,932	13,340	2,409	22.0%	13,340	2,409	22.0%	0	-10,932	-100.0%
Harvest Value	\$5,138	\$6,270	\$1,132	22.0%	\$6,270	\$1,132	22.0%	\$0	-\$5,138	-100.0%
Tribal										
Harvest (pounds)	420,806	13,559	-407,247	-96.8%	13,559	-407,247	-96.8%	4,255	-416,551	-99.0%
Harvest Value	\$292,918	\$6,658	-\$286,260	-97.7%	\$6,658	-\$286,260	-97.7%	\$2,841	-\$290,077	-99.0%
Processing Value	\$513,136	\$28,214	-\$484,922	-94.5%	\$28,214	-\$484,922	-94.5%	\$5,567	-\$507,569	-98.9%
Statewide Total:										
<sup>1</sup> Marine trips include all local resident, non-local resident, and non-resident of the state sport fishing in the marine waters of Puget Sound and originating from a marina or launch area										
Harvest (pounds)	8,002,099	13,340	-7,988,759	-99.8%	13,340	-7,988,759	-99.8%	0	-8,002,099	-100.0%
Harvest Value	\$3,222,488	\$6,270	-\$3,216,218	-99.8%	\$6,270	-\$3,216,218	-99.8%	\$0	-\$3,222,488	-100.0%
<sup>2</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that										
Harvest (pounds)	11,630,329	2,842,406	-8,787,923	-75.6%	2,485,978	-9,144,351	-78.6%	428,949	-11,201,380	-96.3%
Harvest Value	\$4,961,382	\$842,122	-\$4,119,260	-83.0%	\$782,135	-\$4,179,247	-84.2%	\$106,976	-\$4,854,406	-97.8%
Processing Value	\$18,150,894	\$2,583,387	-\$15,567,508	-85.8%	\$2,325,142	-\$15,825,753	-87.2%	\$331,098	-\$17,819,796	-98.2%

Note: All dollar values are expressed in 2002 dollars.



Table 4.6-11. Direct economic impacts to the commercial fishing and salmon processing industries.  
 Scenario C: 30% Reduction in abundance and 2003 Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Management Unit Level			Alternative 3 - Escapement Goal Management at the Population Level			Alternative 4 - No Fishing		
		Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change
Puget Sound North Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	945.3	0.0	-945.3	-100.0%	0.0	-945.3	-100.0%	0.0	-945.3	-100.0%
Employment <sup>2</sup>	65.6	0.0	-65.6	-100.0%	0.0	-65.6	-100.0%	0.0	-65.6	-100.0%
Personal Income <sup>3</sup>	\$1,685,474	\$0	-\$1,685,474	-100.0%	\$0	-\$1,685,474	-100.0%	\$0	-\$1,685,474	-100.0%
Tribal:										
Jobs <sup>1</sup>	1,540.9	32.5	-1,508.4	-97.9%	2.1	-1,538.8	-99.9%	2.0	-1,539.0	-99.9%
Employment <sup>2</sup>	74.1	4.3	-69.8	-94.2%	0.1	-74.0	-99.9%	0.1	-74.0	-99.9%
Personal Income <sup>3</sup>	\$1,902,511	\$98,163	-\$1,804,348	-94.8%	\$1,467	-\$1,901,044	-99.9%	\$1,303	-\$1,901,207	-99.9%
Processing Sector:										
Employment <sup>2</sup>	178.4	5.5	-172.9	-96.9%	0.2	-178.1	-99.9%	0.2	-178.2	-99.9%
Personal Income <sup>3</sup>	\$4,489,166	\$137,154	-\$4,352,012	-96.9%	\$5,214	-\$4,483,952	-99.9%	\$4,922	-\$4,484,245	-99.9%
South Puget Sound/South Hood Canal:										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	229.0	0.0	-229.0	-100.0%	0.0	-229.0	-100.0%	0.0	-229.0	-100.0%
Employment <sup>2</sup>	7.4	0.0	-7.4	-100.0%	0.0	-7.4	-100.0%	0.0	-7.4	-100.0%
Personal Income <sup>3</sup>	\$185,698	\$0	-\$185,698	-100.0%	\$0	-\$185,698	-100.0%	\$0	-\$185,698	-100.0%
Tribal:										
Jobs <sup>1</sup>	826.0	391.0	-434.9	-52.7%	391.0	-434.9	-52.7%	50.8	-775.1	-93.8%
Employment <sup>2</sup>	27.2	14.9	-12.3	-45.3%	14.9	-12.3	-45.3%	1.3	-25.9	-95.3%
Personal Income <sup>3</sup>	\$683,033	\$331,855	-\$351,178	-51.4%	\$331,855	-\$351,178	-51.4%	\$28,288	-\$654,745	-95.9%
Processing Sector:										
Employment <sup>2</sup>	91.8	31.7	-60.1	-65.5%	31.7	-60.1	-65.5%	5.3	-86.5	-94.2%
Personal Income <sup>3</sup>	\$2,374,849	\$820,448	-\$1,554,401	-65.5%	\$820,448	-\$1,554,401	-65.5%	\$136,497	-\$2,238,352	-94.3%
Strait of Juan de Fuca/North Hood Canal:										
Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.										
Non-Tribal:										
Jobs <sup>1</sup>	1.9	2.3	0.4	22.0%	2.3	0.4	22.0%	0.0	-1.9	-100.0%
Employment <sup>2</sup>	0.1	0.1	0.0	37.8%	0.1	0.0	37.8%	0.0	-0.1	-100.0%
Personal Income <sup>3</sup>	\$2,183	\$2,664	\$481	22.0%	\$2,664	\$481	22.0%	\$0	-\$2,183	-100.0%
Tribal:										
Jobs <sup>1</sup>	148.5	3.4	-145.1	-97.7%	3.4	-145.1	-97.7%	1.4	-147.1	-99.0%
Employment <sup>2</sup>	5.0	0.1	-4.9	-97.3%	0.1	-4.9	-97.3%	0.1	-5.0	-99.0%
Personal Income <sup>3</sup>	\$128,364	\$3,008	-\$125,356	-97.7%	\$3,008	-\$125,356	-97.7%	\$1,150	-\$127,214	-99.1%
Note: Sport fishing-related effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state										
Employment <sup>2</sup>	6.3	0.4	-5.9	-93.7%	0.4	-5.9	-93.7%	0.1	-6.2	-99.0%
Personal Income <sup>3</sup>	\$159,935	\$10,032	-\$149,903	-93.7%	\$10,032	-\$149,903	-93.7%	\$1,568	-\$158,367	-99.0%
State:										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	1,176.2	2.3	-1,173.9	-99.8%	2.3	-1,173.9	-99.8%	0.0	-1,176.2	-100.0%
Employment <sup>2</sup>	69.6	0.1	-69.5	-99.8%	0.1	-69.5	-99.8%	0.0	-69.6	-100.0%
Personal Income <sup>3</sup>	\$1,770,127	\$2,576	-\$1,767,552	-99.9%	\$2,576	-\$1,767,552	-99.9%	\$0	-\$1,770,127	-100.0%
Non-residents of Washington:										
Jobs <sup>1</sup>	2,515.4	427.0	-2,088.5	-83.0%	396.5	-2,118.9	-84.2%	54.2	-2,461.2	-97.8%
Employment <sup>2</sup>	102.6	19.2	-83.4	-81.3%	15.1	-87.5	-85.3%	1.3	-101.3	-98.7%
Personal Income <sup>3</sup>	\$2,608,057	\$435,855	-\$2,172,202	-83.3%	\$344,754	-\$2,263,304	-86.8%	\$30,698	-\$2,577,359	-98.8%
Processing Sector:										
Employment <sup>2</sup>	275.0	39.9	-235.1	-85.5%	34.8	-240.2	-87.3%	5.9	-269.1	-97.8%
Personal Income <sup>3</sup>	\$6,989,134	\$1,013,918	-\$5,975,216	-85.5%	\$885,907	-\$6,103,227	-87.3%	\$151,152	-\$6,837,983	-97.8%

Note: Regional totals may not sum up to statewide totals because of differences in regional and statewide employment and personal income coefficients generated by the FEAM model

<sup>1</sup> Represents full- and part-time jobs.

<sup>2</sup> Represents full-time equivalent jobs.

<sup>3</sup> Personal income, expressed in 2002 dollars, includes employee compensation, proprietor income, and other property income.





## Section 4 – Environmental Consequences

Table 4.6-12. Impacts to sport fishing trips and expenditures by region.  
Scenario C: 30% Reduction in abundance and 2003 Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Unit Level		Alternative 3 - Escapement Goal Management at the Population Level		Alternative 4 - No Fishing	
		Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change
North Puget Sound:							
Marine trips originating from the region <sup>1</sup>	118,554	-118,554	-100.0%	-118,554	-100.0%	-118,554	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	351,609	-274,166	-78.0%	-300,306	-85.4%	-349,558	-99.4%
Total trips	470,163	-392,720	-83.5%	-418,860	-89.1%	-468,112	-99.6%
Expenditures in the region <sup>3</sup>	\$30,233,716	-\$6,535,617	-21.6%	-\$7,018,991	-23.2%	-\$7,929,732	-26.2%
South Puget Sound/South Hood Canal:							
Marine trips originating from the region <sup>1</sup>	215,562	-215,562	-100.0%	-215,562	-100.0%	-215,562	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	263,094	-182,513	-69.4%	-182,513	-69.4%	-260,975	-99.2%
Total trips	478,656	-398,075	-83.2%	-398,075	-83.2%	-476,537	-99.6%
Expenditures in the region <sup>3</sup>	\$30,032,910	-\$3,514,752	-11.7%	-\$3,514,752	-11.7%	-\$4,290,425	-14.3%
Strait of Juan de Fuca/North Hood Canal:							
Marine trips originating from the region <sup>1</sup>	343,428	-343,428	-100.0%	-343,428	-100.0%	-343,428	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	55,492	-49,941	-90.0%	-52,844	-95.2%	-55,352	-99.7%
Total trips	398,920	-393,369	-98.6%	-396,272	-99.3%	-398,780	-100.0%
Expenditures in the region <sup>3</sup>	\$23,334,015	-\$16,121,151	-69.1%	-\$16,232,293	-69.6%	-\$16,328,320	-70.0%
Regional Total:							
Marine trips originating from the region <sup>1</sup>	677,544	-677,544	-100.0%	-677,544	-100.0%	-677,544	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	670,195	-506,620	-75.6%	-535,663	-79.9%	-665,885	-99.4%
Total trips	1,347,739	-1,184,164	-87.9%	-1,213,207	-90.0%	-1,343,429	-99.7%
Expenditures in the region <sup>3</sup>	\$83,600,641	-\$26,171,521	-31.3%	-\$26,766,036	-32.0%	-\$28,548,477	-34.1%

Note: Detailed information for angler types is included in the Economics Technical Appendix (Appendix D).

<sup>1</sup> Marine trips include all local resident, non-local resident, and non-resident of the state sport fishing in the marine waters of Puget Sound and originating from a marina or launch area in the region identified.

<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.

<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that assumed that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.



## Section 4 – Environmental Consequences

Table 4.6-13. Regional economic impacts of the alternatives.

Scenario C: 30% Reduction in abundance and 2003 Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Unit Level		Alternative 3 - Escapement Goal Management at the Population Level		Alternative 4 - No Fishing	
		Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change
North Puget Sound:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$16,932,469	-\$16,598,935	-98.0%	-\$16,917,166	-99.9%	-\$16,918,207	-99.9%
Employment <sup>2</sup>	511.5	-496.6	-97.1%	-511.1	-99.9%	-511.1	-99.9%
Personal Income <sup>3</sup>	\$16,376,958	-\$15,899,777	-97.1%	-\$16,363,414	-99.9%	-\$16,364,332	-99.9%
Sport Fishing Effects							
Sales <sup>4</sup>	\$30,233,716	-\$6,535,617	-21.6%	-\$7,018,991	-23.2%	-\$7,929,732	-26.2%
Employment <sup>2</sup>	536.8	-124.2	-23.1%	-133.3	-24.8%	-150.4	-28.0%
Personal Income <sup>3</sup>	\$20,349,409	-\$4,441,685	-21.8%	-\$4,772,213	-23.5%	-\$5,394,974	-26.5%
South Puget Sound/South Hood Canal:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$8,591,104	-\$5,534,001	-64.4%	-\$5,534,001	-64.4%	-\$8,175,700	-95.2%
Employment <sup>2</sup>	213.5	-137.7	-64.5%	-137.7	-64.5%	-202.7	-94.9%
Personal Income <sup>3</sup>	\$7,713,533	-\$4,974,125	-64.5%	-\$4,974,125	-64.5%	-\$7,321,188	-94.9%
Sport Fishing Effects							
Sales <sup>4</sup>	\$30,032,910	-\$3,514,752	-11.7%	-\$3,514,752	-11.7%	-\$4,290,425	-14.3%
Employment <sup>2</sup>	470.7	-61.0	-13.0%	-61.0	-13.0%	-74.0	-15.7%
Personal Income <sup>3</sup>	\$22,409,940	-\$2,650,376	-11.8%	-\$2,650,376	-11.8%	-\$3,241,632	-14.5%
Strait of Juan de Fuca/North Hood Canal:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$811,192	-\$770,050	-94.9%	-\$770,050	-94.9%	-\$802,784	-99.0%
Employment <sup>2</sup>	19.2	-18.2	-94.6%	-18.2	-94.6%	-19.0	-99.1%
Personal Income <sup>3</sup>	\$567,483	-\$536,810	-94.6%	-\$536,810	-94.6%	-\$562,173	-99.1%
Sport Fishing Effects							
Sales <sup>4</sup>	\$23,334,015	-\$16,121,151	-69.1%	-\$16,232,293	-69.6%	-\$16,328,320	-70.0%
g from a marina or launch area <sup>5</sup>	477.6	-341.3	-71.5%	-343.4	-71.9%	-345.3	-72.3%
Personal Income <sup>3</sup>	\$13,894,215	-\$9,550,833	-68.7%	-\$9,618,471	-69.2%	-\$9,676,911	-69.6%
<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified							
<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed							
Sales <sup>1</sup>	\$26,334,765	-\$22,902,986	-87.0%	-\$23,221,218	-88.2%	-\$25,896,691	-98.3%
Employment <sup>2</sup>	728.2	-635.2	-87.2%	-649.2	-89.2%	-716.6	-98.4%
Personal Income <sup>3</sup>	\$25,314,356	-\$22,081,797	-87.2%	-\$22,569,799	-89.2%	-\$24,911,218	-98.4%
Sport Fishing Effects <sup>3</sup>							
Sales <sup>4</sup>	\$84,147,737	-\$5,049,946	-6.0%	-\$5,123,251	-6.1%	-\$5,414,087	-6.4%
Employment <sup>2</sup>	1,466.8	-94.1	-6.4%	-95.5	-6.5%	-101.3	-6.9%
Personal Income <sup>3</sup>	\$64,104,502	-\$3,823,344	-6.0%	-\$3,880,986	-6.1%	-\$4,109,682	-6.4%

Note: Sport fishing-related effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.

<sup>1</sup> Represents direct commercial salmon harvester and processing sales in 2002 dollars.

<sup>2</sup> Represents total (direct and secondary) full-time equivalent jobs.

<sup>3</sup> Represents total (direct and secondary) personal income in 2002 dollars. Personal income includes employee compensation, proprietor income, and other property income.

<sup>4</sup> Represents direct sales to sport fishing anglers in 2002 dollars.

<sup>5</sup> Under alternatives to the Proposed Action, statewide effects for sportfishing include only those generated by changes in spending by non-residents of Washington. Changes in spending by Washington residents would merely redirect money already in the state economy and would result in no net economic effects.



Section 4 – Environmental Consequences

Table 4.6-14. Impacts to commercial harvest, commercial harvest value, and processing value.  
Scenario D: 30% Reduction in abundance with maximum Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Management Unit Level			Alternative 3 - Escapement Goal Management at the Population Level			Alternative 4 - No Fishing		
		Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change
Puget Sound North:										
Non-Tribal										
Harvest (pounds)	5,446,432	0	-5,446,432	-100.0%	0	-5,446,432	-100.0%	0	-5,446,432	-100.0%
Harvest Value	\$2,567,061	\$0	-\$2,567,061	-100.0%	\$0	-\$2,567,061	-100.0%	\$0	-\$2,567,061	-100.0%
Tribal										
Harvest (pounds)	6,574,849	370,212	-6,204,637	-94.4%	14,081	-6,560,768	-99.8%	13,310	-6,561,539	-99.8%
Harvest Value	\$3,016,306	\$63,988	-\$2,952,318	-97.9%	\$4,189	-\$3,012,117	-99.9%	\$3,873	-\$3,012,433	-99.9%
Processing Value	\$11,244,390	\$269,055	-\$10,975,335	-97.6%	\$11,113	-\$11,233,276	-99.9%	\$10,389	-\$11,234,001	-99.9%
South Puget Sound/South Hood Canal:										
Non-Tribal										
Harvest (pounds)	2,516,308	0	-2,516,308	-100.0%	0	-2,516,308	-100.0%	0	-2,516,308	-100.0%
Harvest Value	\$627,322	\$0	-\$627,322	-100.0%	\$0	-\$627,322	-100.0%	\$0	-\$627,322	-100.0%
Tribal										
Harvest (pounds)	4,577,736	2,431,935	-2,145,801	-46.9%	2,431,935	-2,145,801	-46.9%	411,384	-4,166,352	-91.0%
Harvest Value	\$1,612,233	\$754,655	-\$857,578	-53.2%	\$754,655	-\$857,578	-53.2%	\$100,262	-\$1,511,971	-93.8%
Processing Value	\$6,298,089	\$2,250,435	-\$4,047,653	-64.3%	\$2,250,435	-\$4,047,653	-64.3%	\$315,142	-\$5,982,946	-95.0%
Strait of Juan de Fuca/North Hood Canal:										
Non-Tribal										
Harvest (pounds)	10,920	13,340	2,420	22.2%	13,340	2,420	22.2%	0	-10,920	-100.0%
Harvest Value	\$5,132	\$6,270	\$1,138	22.2%	\$6,270	\$1,138	22.2%	\$0	-\$5,132	-100.0%
Tribal										
Harvest (pounds)	420,800	13,559	-407,241	-96.8%	13,559	-407,241	-96.8%	4,255	-416,545	-99.0%
Harvest Value	\$292,915	\$6,658	-\$286,257	-97.7%	\$6,658	-\$286,257	-97.7%	\$2,841	-\$290,074	-99.0%
Processing Value	\$513,118	\$28,214	-\$484,904	-94.5%	\$28,214	-\$484,904	-94.5%	\$5,567	-\$507,551	-98.9%
Statewide Total:										
Marine trips include all local resident, non-local resident, and non-resident of the state sport fishing in the marine waters of Puget Sound and originating from a marina or launch area										
Harvest (pounds)	7,973,660	13,340	-7,960,319	-99.8%	13,340	-7,960,319	-99.8%	0	-7,973,660	-100.0%
Harvest Value	\$3,199,515	\$6,270	-\$3,193,245	-99.8%	\$6,270	-\$3,193,245	-99.8%	\$0	-\$3,199,515	-100.0%
Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that										
Harvest (pounds)	11,573,385	2,815,707	-8,757,679	-75.7%	2,459,576	-9,113,810	-78.7%	428,949	-11,144,437	-96.3%
Harvest Value	\$4,921,455	\$825,301	-\$4,096,154	-83.2%	\$765,502	-\$4,155,953	-84.4%	\$106,976	-\$4,814,479	-97.8%
Processing Value	\$18,055,597	\$2,547,704	-\$15,507,892	-85.9%	\$2,289,763	-\$15,765,834	-87.3%	\$331,098	-\$17,724,499	-98.2%

Note: All dollar values are expressed in 2002 dollars.



Table 4.6-15. Direct economic impacts to the commercial fishing and salmon processing industries.  
 Scenario D: 30% Reduction in abundance with maximum Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Management Unit Level			Alternative 3 - Escapement Goal Management at the Population Level			Alternative 4 - No Fishing		
		Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change	Number	Change from Alternative 1	Percent Change
Puget Sound North Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	937.0	0.0	-937.0	-100.0%	0.0	-937.0	-100.0%	0.0	-937.0	-100.0%
Employment <sup>2</sup>	65.2	0.0	-65.2	-100.0%	0.0	-65.2	-100.0%	0.0	-65.2	-100.0%
Personal Income <sup>3</sup>	\$1,673,335	\$0	-\$1,673,335	-100.0%	\$0	-\$1,673,335	-100.0%	\$0	-\$1,673,335	-100.0%
Tribal:										
Jobs <sup>1</sup>	1,529.3	32.4	-1,496.8	-97.9%	2.1	-1,527.1	-99.9%	2.0	-1,527.3	-99.9%
Employment <sup>2</sup>	73.6	4.3	-69.3	-94.2%	0.1	-73.5	-99.9%	0.1	-73.5	-99.9%
Personal Income <sup>3</sup>	\$1,890,123	\$98,035	-\$1,792,088	-94.8%	\$1,467	-\$1,888,656	-99.9%	\$1,303	-\$1,888,819	-99.9%
Processing Sector:										
Employment <sup>2</sup>	177.5	5.4	-172.1	-96.9%	0.2	-177.3	-99.9%	0.2	-177.3	-99.9%
Personal Income <sup>3</sup>	\$4,467,556	\$137,042	-\$4,330,514	-96.9%	\$5,214	-\$4,462,342	-99.9%	\$4,922	-\$4,462,634	-99.9%
South Puget Sound/South Hood Canal:										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	229.0	0.0	-229.0	-100.0%	0.0	-229.0	-100.0%	0.0	-229.0	-100.0%
Employment <sup>2</sup>	7.4	0.0	-7.4	-100.0%	0.0	-7.4	-100.0%	0.0	-7.4	-100.0%
Personal Income <sup>3</sup>	\$185,683	\$0	-\$185,683	-100.0%	\$0	-\$185,683	-100.0%	\$0	-\$185,683	-100.0%
Tribal:										
Jobs <sup>1</sup>	817.4	382.6	-434.8	-53.2%	382.6	-434.8	-53.2%	50.8	-766.6	-93.8%
Employment <sup>2</sup>	26.8	14.4	-12.4	-46.2%	14.4	-12.4	-46.2%	1.3	-25.5	-95.2%
Personal Income <sup>3</sup>	\$672,982	\$321,654	-\$351,328	-52.2%	\$321,654	-\$351,328	-52.2%	\$28,288	-\$644,694	-95.8%
Processing Sector:										
Employment <sup>2</sup>	91.5	31.4	-60.1	-65.7%	31.4	-60.1	-65.7%	5.3	-86.2	-94.2%
Personal Income <sup>3</sup>	\$2,365,528	\$811,577	-\$1,553,951	-65.7%	\$811,577	-\$1,553,951	-65.7%	\$136,497	-\$2,229,031	-94.2%
Strait of Juan de Fuca/North Hood Canal:										
Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.										
Non-Tribal:										
Jobs <sup>1</sup>	1.9	2.3	0.4	22.2%	2.3	0.4	22.2%	0.0	-1.9	-100.0%
Employment <sup>2</sup>	0.1	0.1	0.0	37.9%	0.1	0.0	37.9%	0.0	-0.1	-100.0%
Personal Income <sup>3</sup>	\$2,180	\$2,664	\$483	22.2%	\$2,664	\$483	22.2%	\$0	-\$2,180	-100.0%
Tribal:										
Jobs <sup>1</sup>	148.5	3.4	-145.1	-97.7%	3.4	-145.1	-97.7%	1.4	-147.1	-99.0%
Employment <sup>2</sup>	5.0	0.1	-4.9	-97.3%	0.1	-4.9	-97.3%	0.1	-5.0	-99.0%
Personal Income <sup>3</sup>	\$128,363	\$3,008	-\$125,354	-97.7%	\$3,008	-\$125,354	-97.7%	\$1,150	-\$127,213	-99.1%
Note: Sport fishing-related effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state.										
Employment <sup>2</sup>	6.3	0.4	-5.9	-93.7%	0.4	-5.9	-93.7%	0.1	-6.2	-99.0%
Personal Income <sup>3</sup>	\$159,929	\$10,032	-\$149,897	-93.7%	\$10,032	-\$149,897	-93.7%	\$1,568	-\$158,360	-99.0%
State:										
Harvesting Sector:										
Non-Tribal:										
Jobs <sup>1</sup>	1,167.8	2.3	-1,165.5	-99.8%	2.3	-1,165.5	-99.8%	0.0	-1,167.8	-100.0%
Employment <sup>2</sup>	69.1	0.1	-69.0	-99.8%	0.1	-69.0	-99.8%	0.0	-69.1	-100.0%
Personal Income <sup>3</sup>	\$1,758,674	\$2,576	-\$1,756,098	-99.9%	\$2,576	-\$1,756,098	-99.9%	\$0	-\$1,758,674	-100.0%
Non-residents of Washington:										
Jobs <sup>1</sup>	2,495.2	418.4	-2,076.7	-83.2%	388.1	-2,107.1	-84.4%	54.2	-2,440.9	-97.8%
Employment <sup>2</sup>	101.7	18.7	-83.0	-81.6%	14.7	-87.1	-85.6%	1.3	-100.4	-98.7%
Personal Income <sup>3</sup>	\$2,585,893	\$425,066	-\$2,160,827	-83.6%	\$334,084	-\$2,251,809	-87.1%	\$30,698	-\$2,555,194	-98.8%
Processing Sector:										
Employment <sup>2</sup>	273.8	39.5	-234.3	-85.6%	34.5	-239.3	-87.4%	5.9	-267.9	-97.8%
Personal Income <sup>3</sup>	\$6,958,446	\$1,004,327	-\$5,954,118	-85.6%	\$876,423	-\$6,082,023	-87.4%	\$151,152	-\$6,807,294	-97.8%

Note: Regional totals may not sum up to statewide totals because of differences in regional and statewide employment and personal income coefficients generated by the FEAM model.

<sup>1</sup> Represents full- and part-time jobs.

<sup>2</sup> Represents full-time equivalent jobs.

<sup>3</sup> Personal income, expressed in 2002 dollars, includes employee compensation, proprietor income, and other property income.





## Section 4 – Environmental Consequences

Table 4.6-16. Impacts to sport fishing trips and expenditures by region.

Scenario D: 30% Reduction in abundance with maximum Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Unit Level		Alternative 3 - Escapement Goal Management at the Population Level		Alternative 4 - No Fishing	
		Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change
North Puget Sound:							
Marine trips originating from the region <sup>1</sup>	119,653	-119,653	-100.0%	-119,653	-100.0%	-119,653	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	354,535	-282,791	-79.8%	-308,851	-87.1%	-352,484	-99.4%
Total trips	474,188	-402,444	-84.9%	-428,504	-90.4%	-472,137	-99.6%
Expenditures in the region <sup>3</sup>	\$30,491,871	-\$6,709,000	-22.0%	-\$7,190,855	-23.6%	-\$7,997,710	-26.2%
South Puget Sound/South Hood Canal:							
Marine trips originating from the region <sup>1</sup>	217,544	-217,544	-100.0%	-217,544	-100.0%	-217,544	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	267,415	-189,746	-71.0%	-189,746	-71.0%	-265,296	-99.2%
Total trips	484,959	-407,290	-84.0%	-407,290	-84.0%	-482,840	-99.6%
Expenditures in the region <sup>3</sup>	\$30,434,487	-\$3,594,729	-11.8%	-\$3,594,729	-11.8%	-\$4,341,599	-14.3%
Strait of Juan de Fuca/North Hood Canal:							
Marine trips originating from the region <sup>1</sup>	352,411	-352,411	-100.0%	-352,411	-100.0%	-352,411	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	56,352	-50,990	-90.5%	-53,885	-95.6%	-56,212	-99.8%
Total trips	408,763	-403,401	-98.7%	-406,296	-99.4%	-408,623	-100.0%
Expenditures in the region <sup>3</sup>	\$23,911,897	-\$16,523,168	-69.1%	-\$16,633,979	-69.6%	-\$16,723,078	-69.9%
Regional Total:							
Marine trips originating from the region <sup>1</sup>	689,608	-689,608	-100.0%	-689,608	-100.0%	-689,608	-100.0%
Freshwater trips occurring in the region <sup>2</sup>	678,302	-523,527	-77.2%	-552,482	-81.5%	-673,992	-99.4%
Total trips	1,367,910	-1,213,135	-88.7%	-1,242,090	-90.8%	-1,363,600	-99.7%
Expenditures in the region <sup>3</sup>	\$84,838,256	-\$26,826,897	-31.6%	-\$27,419,563	-32.3%	-\$29,062,386	-34.3%

Note: Detailed information for angler types is included in the Economics Technical Appendix (Appendix D).

<sup>1</sup> Marine trips include all local resident, non-local resident, and non-resident of the state sport fishing in the marine waters of Puget Sound and originating from a marina or launch are: in the region identified.

<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.

<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.



Table 4.6-17. Regional economic impacts of the alternatives.

Scenario D: 30% Reduction in abundance with maximum Canadian/Alaskan Pacific Salmon Treaty fisheries.

Region	Alternative 1 Proposed Action/ Status Quo	Alternative 2 - Escapement Goal Management at the Unit Level		Alternative 3 - Escapement Goal Management at the Population Level		Alternative 4 - No Fishing	
		Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change	Change from Alternative 1	Percent Change
North Puget Sound:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$16,827,756	-\$16,494,713	-98.0%	-\$16,812,454	-99.9%	-\$16,813,494	-99.9%
Employment <sup>2</sup>	508.6	-493.7	-97.1%	-508.2	-99.9%	-508.2	-99.9%
Personal Income <sup>3</sup>	\$16,283,382	-\$15,806,686	-97.1%	-\$16,269,838	-99.9%	-\$16,270,755	-99.9%
Sport Fishing Effects							
Sales <sup>4</sup>	\$30,491,871	-\$6,709,000	-22.0%	-\$7,190,855	-23.6%	-\$7,997,710	-26.2%
Employment <sup>2</sup>	541.4	-127.5	-23.5%	-136.5	-25.2%	-151.6	-28.0%
Personal Income <sup>3</sup>	\$20,523,138	-\$4,559,981	-22.2%	-\$4,889,470	-23.8%	-\$5,441,193	-26.5%
South Puget Sound/South Hood Canal:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$8,537,644	-\$5,532,554	-64.8%	-\$5,532,554	-64.8%	-\$8,122,240	-95.1%
Employment <sup>2</sup>	212.3	-137.7	-64.9%	-137.7	-64.9%	-201.4	-94.9%
Personal Income <sup>3</sup>	\$7,667,405	-\$4,973,409	-64.9%	-\$4,973,409	-64.9%	-\$7,275,061	-94.9%
Sport Fishing Effects							
Sales <sup>4</sup>	\$30,434,487	-\$3,594,729	-11.8%	-\$3,594,729	-11.8%	-\$4,341,599	-14.3%
Employment <sup>2</sup>	477.0	-62.3	-13.1%	-62.3	-13.1%	-74.9	-15.7%
Personal Income <sup>3</sup>	\$22,709,494	-\$2,711,198	-11.9%	-\$2,711,198	-11.9%	-\$3,280,499	-14.4%
Strait of Juan de Fuca/North Hood Canal:							
Commercial Fishing Effects							
Sales <sup>1</sup>	\$811,166	-\$770,024	-94.9%	-\$770,024	-94.9%	-\$802,758	-99.0%
Employment <sup>2</sup>	19.2	-18.2	-94.6%	-18.2	-94.6%	-19.0	-99.1%
Personal Income <sup>3</sup>	\$567,463	-\$536,790	-94.6%	-\$536,790	-94.6%	-\$562,153	-99.1%
Sport Fishing Effects							
Sales <sup>4</sup>	\$23,911,897	-\$16,523,168	-69.1%	-\$16,633,979	-69.6%	-\$16,723,078	-69.9%
Employment <sup>2</sup>	489.5	-349.8	-71.5%	-351.9	-71.9%	-353.7	-72.3%
Personal Income <sup>3</sup>	\$14,237,944	-\$9,788,652	-68.8%	-\$9,856,089	-69.2%	-\$9,910,311	-69.6%
<sup>2</sup> Freshwater trips include all local resident, non-local resident, and non-resident of the state sport fishing trips to fresh waters within the region identified.							
<sup>3</sup> Expenditure effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.							
Sales <sup>1</sup>	\$26,176,566	-\$22,797,291	-87.1%	-\$23,115,032	-88.3%	-\$25,738,492	-98.3%
Employment <sup>2</sup>	724.0	-632.3	-87.3%	-646.4	-89.3%	-712.5	-98.4%
Personal Income <sup>3</sup>	\$25,171,134	-\$21,983,966	-87.3%	-\$22,471,461	-89.3%	-\$24,767,996	-98.4%
Sport Fishing Effects <sup>5</sup>							
Sales <sup>4</sup>	\$85,396,400	-\$5,179,514	-6.1%	-\$5,252,602	-6.2%	-\$5,523,958	-6.5%
Employment <sup>2</sup>	1,488.8	-96.5	-6.5%	-97.9	-6.6%	-103.3	-6.9%
Personal Income <sup>3</sup>	\$65,055,332	-\$3,921,734	-6.0%	-\$3,979,205	-6.1%	-\$4,192,583	-6.4%

Note: Sport fishing-related effects of alternatives to the Proposed Action include those associated only with non-local resident and non-resident of the state spending because it is assumed that spending by local resident anglers would continue in the region regardless of changes in local resident sport fishing activity under the alternatives.

<sup>1</sup> Represents direct commercial salmon harvester and processing sales in 2002 dollars.

<sup>2</sup> Represents total (direct and secondary) full-time equivalent jobs.

<sup>3</sup> Represents total (direct and secondary) personal income in 2002 dollars. Personal income includes employee compensation, proprietor income, and other property income.

<sup>4</sup> Represents direct sales to sport fishing anglers in 2002 dollars.

<sup>5</sup> Under alternatives to the Proposed Action, statewide effects for sportfishing include only those generated by changes in spending by non-residents of Washington. Changes in spending by Washington residents would merely redirect money already in the state economy and would result in no net economic effects.



1 Table 4.6-18. Baseline and change in net economic values of commercial salmon fishing (in millions  
2 of 2002 dollars).

Scenario	Baseline Conditions (Proposed Action/Status Quo)	Change from Baseline Conditions		
		Alternative 2: Management Unit Escapement Goal Management	Alternative 3: Population Unit Escapement Goal Management	Alternative 4: No Fishing
Scenario A: 2003 Abundance and 2003 Canadian/ Alaskan PST Fisheries	\$8.4 M	-\$9.7 M	-\$10.0 M	-\$11.2 M
Scenario B: 2003 Abundance and Maximum Canadian/ Alaskan PST Fisheries	\$8.3 M	-\$9.7 M	-\$9.9 M	-\$11.2 M
Scenario C: 30% Reduction in Abundance and 2003 Canadian/ Alaskan PST Fisheries	\$8.2 M	-\$9.8 M	-\$9.9 M	-\$10.9 M
Scenario D: 30% Reduction in Abundance and Maximum Canadian/ Alaskan PST Fisheries	\$8.1 M	-\$9.7 M	-\$9.8 M	-\$10.9 M

3 Note: The reductions in net economic values associated with Alternatives 2 through 4 are larger than baseline  
4 conditions because these values include the costs to society associated with unemployed labor resources and  
5 expected losses in capital investment value.

1 Table 4.6-19. Baseline and changes in angler days and net economic value (NEV) of salmon sport  
2 fishing in the Puget Sound area.

Scenario	Baseline Conditions (Proposed Action/ Status Quo)		Alternative 2: Management Unit Escapement Goal Management		Alternative 3: Population Unit Escapement Goal Management		Alternative 4: No Fishing	
	Angler Days	NEV	Change in Angler Days	Change in NEV	Change in Angler Days	Change in NEV	Change in Angler Days	Change in NEV
Scenario A: 2003 Abundance and 2003 Canadian/Alaskan PST Fisheries	1,443,600	\$98.2 M	-1,211,660	-\$82.4 M	-1,266,070	-\$86.1 M	-1,439,290	-\$97.9 M
Scenario B: 2003 Abundance and Maximum Canadian/ Alaskan PST Fisheries	1,434,100	\$97.5 M	-1,210,620	-\$82.3 M	-1,265,100	-\$86.0 M	-1,429,790	-\$97.2 M
Scenario C: 30% Reduction in Abundance and 2003 Canadian/ Alaskan PST Fisheries	1,347,700	\$91.6 M	-1,184,120	-\$80.5 M	-1,213,170	-\$82.5 M	-1,363,590	-\$92.7 M
Scenario D: 30% Reduction in Abundance and Maximum Canadian/ Alaskan PST Fisheries	1,367,900	\$93.0 M	-1,212,920	-\$82.5 M	-1,242,080	-\$84.5 M	-1,363,590	-\$92.7 M

3 Note: Monetary values are expressed in millions of 2002 dollars.

**4.6.6 Cumulative Effects**

NEPA defines cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR1508.7). For the purposes of this discussion, the terms “effects” and “impacts” will be considered synonymously with “consequences,” and consequences may be negative or beneficial. This section presents an analysis of the cumulative effects (negative or beneficial) of the Proposed Action in the context of other local, state, tribal, and federal management activities in the Puget Sound region on fish resources and related economic conditions.

The geographic scope of the cumulative effects analysis area includes the entire Puget Sound region. The analysis area covers both inland and marine environments that are managed under laws, policies, regulations, and plans having a direct or indirect impact on fish. The substantive scope of the cumulative analysis is predicated on a review of all laws, policies, regulations, and plans that specifically pertain to fish-related management activities or that have an indirect negative or beneficial effect on fish resources and related economic conditions. These laws, policies, regulations, and plans are described in Section 1 and Appendix F. Because of the geographic scope of the analysis area, it is not feasible to analyze all habitat-specific activities that are occurring, have occurred in the past, or that will occur in the future in a quantitative manner. By reviewing all laws, policies, regulations, and plans, the analysis captures the objectives of any management activity that is occurring or planned to occur that may interface with fish resources within the Puget Sound region. It is assumed that no management activity is occurring or would occur outside of an implemented law, policy, regulation, or sanctioned plan at the federal, tribal, state, or local level. Although the analysis is necessarily qualitative, it provides a thorough review of all other activities within the region that, when combined with the Proposed Action, could have a negative or beneficial affect on fish resources and related economic conditions.

Table 4.3.8.2-1 summarizes the potential cumulative effects to fish resources of implementing the Proposed Action with the effects of these existing laws, policies, regulations, and plans. Table 4.6-20 below summarizes the potential cumulative effects on economic conditions of other plans, policies and programs in the Puget Sound region.

The Proposed Action is implementation of the Puget Sound Chinook Harvest Resource Management Plan (RMP), jointly prepared by the Washington Department of Fish and Wildlife (WDFW) and the

1 Puget Sound Treaty Tribes (co-managers). Factors common to the relationship between the RMP and  
2 the various existing plans, policies and programs include: 1) the Resource Management Plan would  
3 provide protection to Puget Sound chinook salmon by conserving the productivity, abundance, and  
4 diversity of populations within the Puget Sound Chinook Evolutionarily Significant Unit (ESU), while  
5 managing harvest of strong salmon stocks; and 2) conserving productivity requires biological integrity  
6 in the freshwater systems in which salmon spawn and rear.



1 Table 4.6-20. Federal, Tribal, Washington State, and local plans, policies, and programs that influence economic condition within the Puget  
2 Sound Action Area (2004).

Federal/Tribal/State/Local		
Plans, Policies, and Programs (in chronological order of the earliest to the most recent)	Description and Intent	Cumulative Effect when Combined with the Proposed Action
<b>State of Washington, Chapter 36.70A RCW Growth Management – Planning by Selected Counties and Cities.</b> Commonly referred to as the Growth Management Act (GMA). Adopted by the state in 1990.	The GMA guides development and adoption of comprehensive land use plans and development regulations of counties and cities within the state of Washington. The goals of the GMA include: “[m]aintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries” and “[p]rotect the environment and enhance the state’s high quality of life, including air and water quality, and the availability of water.”	Under the Proposed Action, commercial fishing and sport fishing activities would occur at levels similar to the recent past. Employment and economic growth levels supported by these activities would have little effect on local and regional land use plans, and would not conflict with growth objectives of the GMA. Consequently, the Proposed Action, when considered in conjunction with the GMA, is predicted to result in no cumulative impact to economic resource conditions, because the Proposed Action would not change current or expected future economic conditions.
<b>Puget Sound Regional Council VISION 2020 Strategy</b> , 1995.	<p>VISION 2020 is the long-range growth management, economic, and transportation strategy for the central Puget Sound region encompassing King, Kitsap, Pierce, and Snohomish counties. The strategy combines a public commitment to a growth management vision with the transportation investments and programs and economic strategy necessary to support that vision. VISION 2020 identifies the policies and key actions necessary to implement the overall strategy.</p> <p>The vision is for “diverse, economically and environmentally healthy communities framed by open space and connected by a high-quality multimodal transportation system that provides effective mobility for people and goods.</p> <p>The VISION 2020 strategy for managing growth, the economy, and transportation contains the following eight parts: urban growth areas; contiguous and orderly development; regional capital facilities; housing; rural areas; open space, resource protection, and critical areas; economics; and transportation. Together, these eight parts constitute the Multi-county Policies for King, Kitsap, Pierce, and Snohomish counties and meet the multi-county planning requirements of Washington’s Growth Management Act.</p>	From a growth and economic development perspective, the Proposed Action would maintain the status quo in regards to employment and personal income growth related to Puget Sound’s commercial and sport fisheries. Consequently, the Proposed Action, when considered in conjunction with the VISION strategy, is predicted to result in no cumulative impact to economic resource conditions, because the Proposed Action would not change current or expected future economic conditions.

1 Table 4.6-20. Federal, Tribal, Washington State, and local plans, policies, and programs that influence economic condition within the Puget  
2 Sound Action Area (2004). *continued*

Federal/Tribal/State/Local		
Plans, Policies, and Programs (in chronological order of the earliest to the most recent)	Description and Intent	Cumulative Effect when Combined with the Proposed Action
<b>Economic Development Agency Plans and Programs</b>	<p>Several economic development councils and agencies operate in the counties surrounding Puget Sound. Economic development agencies normally include private, non-profit agencies that seek to encourage economic growth through the provision of various services to businesses and governments. Agencies in the Puget Sound region include, but are not limited to, the Economic Development Council of Thurston County, the Bellingham/Whatcom County Economic Development Council, the Kitsap Regional Economic Development Council, the Economic Development Council of Tacoma-Pierce County, the Economic Development Council of Seattle/King County, the Mason County Economic Development Council, and the Clallam County Economic Development Council.</p> <p>Economic development councils can affect regional economic growth and conditions in several ways, including through the development of economic development plans and business enhancement programs, and through business relocation assistance and planning, business promotion, coordination with local government economic development planning, and through the provision of socioeconomic data to the public and business community.</p>	<p>From a growth and economic development perspective, the Proposed Action would maintain the status quo in regards to employment and personal income growth related to Puget Sound's commercial and sport fisheries. Consequently, the Proposed Action, when considered in conjunction with economic development plans and programs in the Puget Sound region, is predicted to result in no cumulative impact to economic resource conditions because the Proposed Action would not change current or expected future economic conditions.</p>
<b>Local Plans, Policies, and Programs</b>	<p>Local activities that influence cumulative effects to economic conditions include, but are not limited to, capital improvement projects, growth and development plans, and economic and redevelopment plans.</p>	<p>The fisheries that would be allowed by the Proposed Action are predicted to have minimal to negligible effect on local economic conditions. Recent levels of local employment and growth supported by Puget Sound's commercial and sport salmon fisheries would be maintained by the Proposed Action. Consequently, the Proposed Action, when considered in conjunction with local plans, policies, and programs, is predicted to result in no cumulative impact to economic resource conditions because the Proposed Action would not change current or expected future economic conditions.</p>